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ABSTRACT

A theoretical model based on path analytic logic was used to examine the relative influences of social origin and significant other influences on marital, fertility, and educational plans. Parents' education and the major family income-earner's occupation were used as measures of social origin; perceived encouragement by parents, teachers, counselors, and friends to attend college and close friends. college plans were included as measures of significant other influence. The effect of sex on the formation of educational plans was ascertained through a set of dummy variables. A proportionate, stratified, random cluster sample of 301 white high school seniors in rural Louisiana was used. Zero-order, first-order partial and multiple correlations of marital and fertility plans with educational plans were also computed for the total sample and each sex separately. Some findings were: statistically significant influences were produced by perceived parental and friends' encouragement and close friends' college plans; sex did not have a significant influence on educational plans, but had a notable effect on parental encouragement and marital and fertility plans; the relationship between marital and educational plans was significant; and a strong positive association between marital and educational plans for females contrasted with a significant inverse relationship between these variables for males. (Author/NQ)

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THE FORMULATION OF EDUCATIONAL PLANS: AN ANALYSIS OF WHITE ADOLESCENT MALES AND FEMALES IN RURAL LOUISIANA

U.S. DEPARTMENT OF HEALTH,
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in

The Department of Sociology

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TABLE OF CONTENTS

PAGE

CHAPTER I. INTRODUCTION 1

The Problem 1

Purpose and Significance of the Study 1

Order and Content of the Chpaters 2

CHAPTER II. THEORETICAL FRAMEWORK: A SYSTEMS APPROACH TO THE FORMATION OF EDUCATIONAL PLANS 5

A Brief Overview of Systems Theory 5

A Theoretical Framework for the Study of Educational Plans 9

Antecedent Structural Factors (Inputs) 11

Intervening Mechanisms (Throughputs). 14

Output and Interaction with Other "Open" Systems 17

Methodological Considerations of the Theoretical Framework 17

CHAPTER III. REVIEW OF EXISTING MODELS OF THE FORMULATION OF EDUCATIONAL PLANS 20

Models of Educational Plans 20

The Sewell and Shah Model 20

The "Wisconsin Model" 25

The Bayer Model 29

The Woelfel and Haller Model 32

The Picou and Carter Model 33

A Systems Model for the Study of Educational Plans . 37

PAGE

CHAPTER IV. REVIEW OF EMPIRICAL LITERATURE ON THE RELATIONSHIP BETWEEN SEX AND THE FORMATION OF EDUCATIONAL PLANS 40

Social Origin and the Formation of Educational Plans . 40

Significant Other Influence and the Formation of Educational Plans 45

Marital and Fertility Plans and the Formation of Educational Plans 48

Hypotheses 49

Summary 51

CHAPTER V. METHODS AND PROCEDURES 52

The Sample 52

Operationalization of the Variables 54

Social Origin Variables 54

Significant Other Influence Variables 55

Marital, Fertility and Educational Plans 56

Analytical Techniques 59

The Technique of Path Analysis 59

Techniques for Assessing the Effect of Sex 62

CHAPTER VI. ANALYSIS AND INTERPRETATION--PART I 65

Analysis of the Model of the Formation of Educational Plans for Males 65

Social Origin and Significant Other Influence . . 65

Social Origin, Significant Other Influence and Educational Plans 70

Social Origin, Significant Other Influence and Marital and Fertility Plans 73

Marital Plans, Fertility Plans and Educational Plans 74

PAGE

Analysis of the Model of the Formation of Educational Plans for Females 78

Social Origin and Significant Other Influence . . 78

Social Origin, Significant Other Influence and Educational Plans 82

Social Origin, Significant Other Influence and Marital and Fertility Plans 85

Marital Plans, Fertility Plans and Educational Plans 86

CHAPTER VII. ANALYSIS AND INTERPRETATION--PART II 89

Comparisons of Distributions of the Dependent Variables in the Model of the Formation of Educational Plans 89

The Effect of Sex on the Formation of Educational Plans 101

CHAPTER VIII. SUMMARY AND IMPLICATIONS 106

Summary 106

Implications 116

REFERENCES 119

APPENDIX A QUESTIONNAIRE ITEMS USED 124

VITA 129

LIST OF TABLES

TABLE PAGE

1 Summary of Several Existing Models of Educational Plans and the Variables Examined 23

2 Summary of Selected Empirical Literature on Sex and the Formation of Educational Plans by Variables in the Proposed Model 41

3 Zero-Order Correlations, Means and Standard Deviations of Variables in a Recursive Model of the Formation of Educational Plans: Males (N=143). 66

4 Standardized Regression Coefficients, Coefficients of Determination and Residuals for a Recursive Model of the Formation of Educational Plans: Males (N=143) . . . 68

5 Reduced Form Regression Coefficients in Standard Form for a Recursive Model of the Formation of Educational Plans: Males (N=143) 72

6 Zero-Order, First-Order Partial and Multiple Correlations Between Marital Plans, Fertility Plans and Educational Plans by Sex of the Respondent 75

7 Correlated Residual Effects for a Recursive Model of the Formation of Educational Plans: Males (N=143) . . . 77

8 Zero-Order Correlations, Means and Standard Deviations of Variables in a Recursive Model of the Formation of Educational Plans: Females (N=158) 79

9 Standardized Regression Coefficients, Coefficients of Determination and Residuals for a Recursive Model of the Formation of Educational Plans: Females (N=158) 80

10 Reduced Form Coefficients in Standard Form for a Recursive Model of the Formation of Educational Plans: Females (N=158) 84

11 Correlated Residuals Effects for a Recursive Model of the Formation of Educational Plans: Females (N=158) . . 88

12 Perceived Parental Encouragement to Attend College by Sex of the Respondent: Percentages and Frequencies (in parentheses) 90

13 Perceived Teachers' Encouragement to Attend College by Sex of the Respondent: Percentages and Frequencies (in parentheses) 92

TABLE PAGE

14 Perceived Guidance Counselor's Encouragement to Attend College by Sex of the Respondent: Percentages and Frequencies (in parentheses) 93

15 Perceived Friends' Encouragement to Attend College by Sex of the Respondent: Percentages and Frequencies (in parentheses) 94

16 Close Friends' College Plans by Sex of the Respondent: Percentages and Frequencies (in parentheses) 96

17 Marital Plans (Desired Age at Marriage) by Sex of the Respondent: Percentages and Frequencies (in parentheses) 97

18 Fertility Plans (Desired Number of Children) by Sex of the Respondent: Percentages and Frequencies (in parentheses) 99

19 Educational Plans by Sex of the Respondent: Percentages and Frequencies (in parentheses) 100

20 Zero-Order Correlations, Means and Standard Deviations of Variables in a Recursive Model of the Formation of Educational Plans: Total (N=301) 102

21 Standardized Regression Coefficients, Coefficients of Determination and Residuals for a Recursive Model of the Effect of Sex on the Formation of Educational Plans: Total (N=301) 103

22 Reduced Form Coefficients in Standard Form for a Recursive Model of the Effect of Sex on the Formation of Education Plans: Total (N=301) 105

23 Summary Table of Comparisons Between the Sexes 113

8

LIST OF FIGURES

FIGURE PAGE

1 A Systems Framework of the Formation of Educational Plans 10

2 The Sewell and Shah Model of the Formation of College Plans 21

3 The "Wisconsin Model" of Level of Educational Aspiration Formation 27

4 The Bayer Model of the Formation of Educational Aspirations 30

5 The Woelfel and Haller Model of the Formation of Educational Aspirations 34

6 The Picou and Carter Model of the Formation of Educational Aspirations 35

7 Causal Diagram of a Recursive Systems Model for Estimating the Effects of Social Origin and Significant Other Influence on Marital Plans, Fertility Plans and Educational Plans 38

ABSTRACT

This thesis reports on the effect of sex on the formation of educational plans. A theoretical model based on path analytic logic was used to examine the relative influences of social origin and significant other influences on marital plans, fertility plans and educational plans. Father's education, mother's education and the major family income-earner's occupation were used as measures of social origin, while perceived encouragement by parents, teachers, guidance counselors and friends to attend college, along with close friends' college plans were included as measures of significant other influence. Additionally, the effect of sex was ascertained through a set of dummy variables. A proportionate, stratified, random cluster sample of 301 white high school seniors in rural Louisiana constituted the sample. Besides obtaining path coefficients for the hypothesized relationships, zero-order, first-order partial and multiple correlations of marital and fertility plans with educational plans were also computed for the total sample and each sex separately. For the total sample, over 30% of the variance in educational plans was accounted for by the social origin and significant other influence variables. Statistically significant influences were produced by perceived parental encouragement, perceived friends' encouragement and close friends' college plans. While sex did not have a significant influence on educational plans, it had a notable effect on parental encouragement as well as on marital and fertility plans. Although the relationship between fertility plans and educational plans was trivial, the relationship

between marital plans and educational plans was significant. A strong positive association between marital and educational plans for females contrasted with a significant inverse relationship between these variables for males. Thus, it was concluded that the influence of sex on the formation of educational plans is largely indirect and is mediated through parental encouragement and marital plans.

CHAPTER I

INTRODUCTION

The Problem

Among the distinguishing features of American society are growth in the number and distribution of high status occupations, increased educational prerequisites to attain these jobs and greater availability of education for both sexes (Krauss, 1964:867). Given that success is a dominant value of the society, youth are encouraged to develop educational plans which are compatible with upward social mobility. Since these plans are quite complex, they must be viewed in a broad context to grasp an understanding of their formation. Although numerous inquiries have been made into the antecedents of educational plans, no cumulative theoretical framework exists within which to organize the amalgam of factors which have been found to be associated with these plans. Furthermore, the relationship of sex to the process of formulating educational plans has not been sufficiently investigated. Many direct sex comparisons which have characterized the previous research are statistically problematic, explaining why an understanding of sex differences in this process is still unclear.

Purpose and Significance of the Study

This research was done with the intent of rectifying the above limitations by: (1) applying a theoretical framework, based on a general systems approach, to the formation of educational plans and

(2) developing a more inclusive theoretical model of the formation of educational plans and utilizing it to assess the effects of sex on this process. Specifically, the model stresses the relationship between social origin, significant other influence, marital plans (desired age at marriage), fertility plans (desired number of children) and educational plans. Sex is utilized as an independent variable to investigate whether male and female youth differentially formulate these plans.

Ultimately, the significance of this study will be to integrate the vast amount of previous research on educational plans into a more coherent, and thus more meaningful, theoretical scheme. The study will also add to the comprehensiveness of this research domain by testing a more inclusive model of the formation of educational plans. In addition, the study will contribute to the research which uses causal models to show the influence of sex on educational plans. A final element of this research which enhances its significance is the rural sample studied. A greater emphasis on this segment of the population has emerged in recent years and this study is intended to add to this growing body of knowledge.

Order and Content of the Chapters

A theoretical framework based on systems theory is presented in Chapter II. Systems theory provides a viable framework and a logical rationale for understanding the complexities involved in the formation of educational plans. This framework is utilized to organize a set of concepts that will be used to evaluate several previously developed models of educational plans and to guide the formation of a more inclusive theoretical model, which is empirically tested.

In the third chapter, several extant models of educational plans are reviewed. The main purpose of this chapter is to show the direction that previous research on this topic has followed. Particular emphasis is placed on the variables employed and the logic underlying their use as well as the contribution of the model to existing knowledge. The theoretical model being tested in this study is then presented.

Previous empirical literature on sex differences in educational plans and their antecedents are reviewed in Chapter IV so that a baseline for comparisons will be available. The specific variables considered in the review are social origin, significant other influence, marital plans, fertility plans and educational plans.

Methods and procedures are presented in the fifth chapter. This includes information on the data being utilized, the operational definitions of the variables and the analytical techniques employed.

The analysis is initiated in Chapter VI by testing the proposed model for males and females separately. These findings deal with the sex-specific aspects of the process which are operative in the formation of educational plans. The direct and indirect effects of sex on this process are examined in the seventh chapter so that inferences can be made about the dynamics involved in differential outcomes between males and females.

Summary and implications of the study are given in the final chapter (VIII). Limitations of this study and suggestions for further research are also provided.

CHAPTER II

THEORETICAL FRAMEWORK: A SYSTEMS APPROACH TO THE FORMATION OF EDUCATIONAL PLANS

The purpose of this chapter is to set the stage for subsequent conceptualizations and analyses by explicating a theoretical framework within which to organize existing knowledge on educational plans and their antecedents. The theoretical framework utilized draws heavily from what has been labeled a general (or modern) systems approach (Parsons, 1951; Buckley, 1967; Berrien, 1968; Bertrand, 1972; Falk, 1975). Educational plans, if one subscribes to a developmental formation, can be viewed as the outcome of a processual flow through a complex of components or factors directly related in a causal network, such that each component is related to at least some others in a more or less stable fashion within any particular period of time (cf. Buckley, 1967; Berrien, 1968).

A Brief Overview of Systems Theory

The processual flow involved in the development of educational plans relates the individual to cultural and societal elements which hold important consequences for the integration and maintenance of a society. Parsons (1951) envisions this relationship in a hierarchical arrangement such that cultural elements (value orientations)circumscribe or limit the range of societal elements (normative standards, as translated into expectations on actors playing roles) which in turn limit the decision-making process of the individual (at the personality level). A definite informational flow becomes readily apparent in this hierarchy of systemic components. Another readily apparent consideration stemming from this hierarchy is man's relationship to his culture and society. Micro analyses of a systems nature are forced to consider the "whole" in understanding the development of a single part. The individual component or the personality level will be the focus of much of the following discussion because it is here that goal-attainment (i.e., education) becomes a functional requisite for societal integration and goal plans are reflective of this function (cf. Parsons, 1951; 1966; 1972).

Diverging from general systems terminology briefly, a crucial element to consider in the study of educational plans is the relationship of the individual to culture and society as manifested in the development of a personality.[1] On an individual basis, personality can be viewed as the sum total of personal attributes including both biological and psychological characteristics (Bertrand, 1972:5). Dissecting this definition, two types of factors can be delimited as instrumental in the formation of a personality; those that are biological and thus external to the individual's immediate control and those which are psychological and thus developmental and dynamic in nature. Neither exists without the other. Innate differences such as race, sex and innate capability are examples of biological factors (Parsons, 1951:142; Bertrand, 1972:7). For the sake of this discussion, one's self conception is an example of a psychological factor. The self concept is a learned product and as such relies heavily on an informational flow.

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[1] By personality, I am now referring to individual qualities and not to the common Parsonian usage, which will henceforth be referred to as personality level. Of course, an intimate degree of correspondence exists between the two concepts.

Although relating to a specific individual, the two aspects of the personality are markedly different, yet crucially interrelated. The biological factors, in essence, exert an influence on the psychological aspect, because biological attributes serve to "categorize" (Woelfel and Haller, 1971) the individual into socially meaningful groups (Parsons, 1951). These social groups are external to the individual and are constrained by cultural and societal values and norms, which when translated into expectations, hold considerable relevance for personality (i.e., self concept) development. The role expectations, for example, concerning females may be highly influential for subsequent self conceptions and goal attainment.

It would be naïve to suggest that structural constraints end with biologically determined categories. Although not an immediate part of the personality, situational variables are another set of factors which are particular to the individual yet infused with structural significance (Bertrand, 1972:7). These factors, like the biological factors, serve an input function for the system by providing information relevant to personality development. According to Bertrand (1972), situational variables are those environmental conditions over which the individual has little or no control. These variables include economic, political, geographic, religious and family aspects of each individual life (Bertrand, 1972:7). Consider, for example, the structural meaning and expectations conveyed by the social class background of a youth on the development of his/her personality.

Socialization provides the necessary link between the structural information and the development of a personality (Parsons, 1966:12). This link cannot be overemphasized. As mentioned previously, the psychological aspect of personality is learned through social interaction and as such does not exist apart from socialization. The ascribed meaning attached to biological and situational attributes is transmitted through socialization processes. George Herbert Mead (1934) extends this line of thinking to the conclusion that a "self" does not exist until society creates one. The norms and expectations associated with social categories temper the socialization processes as well as the type of relationships involved.

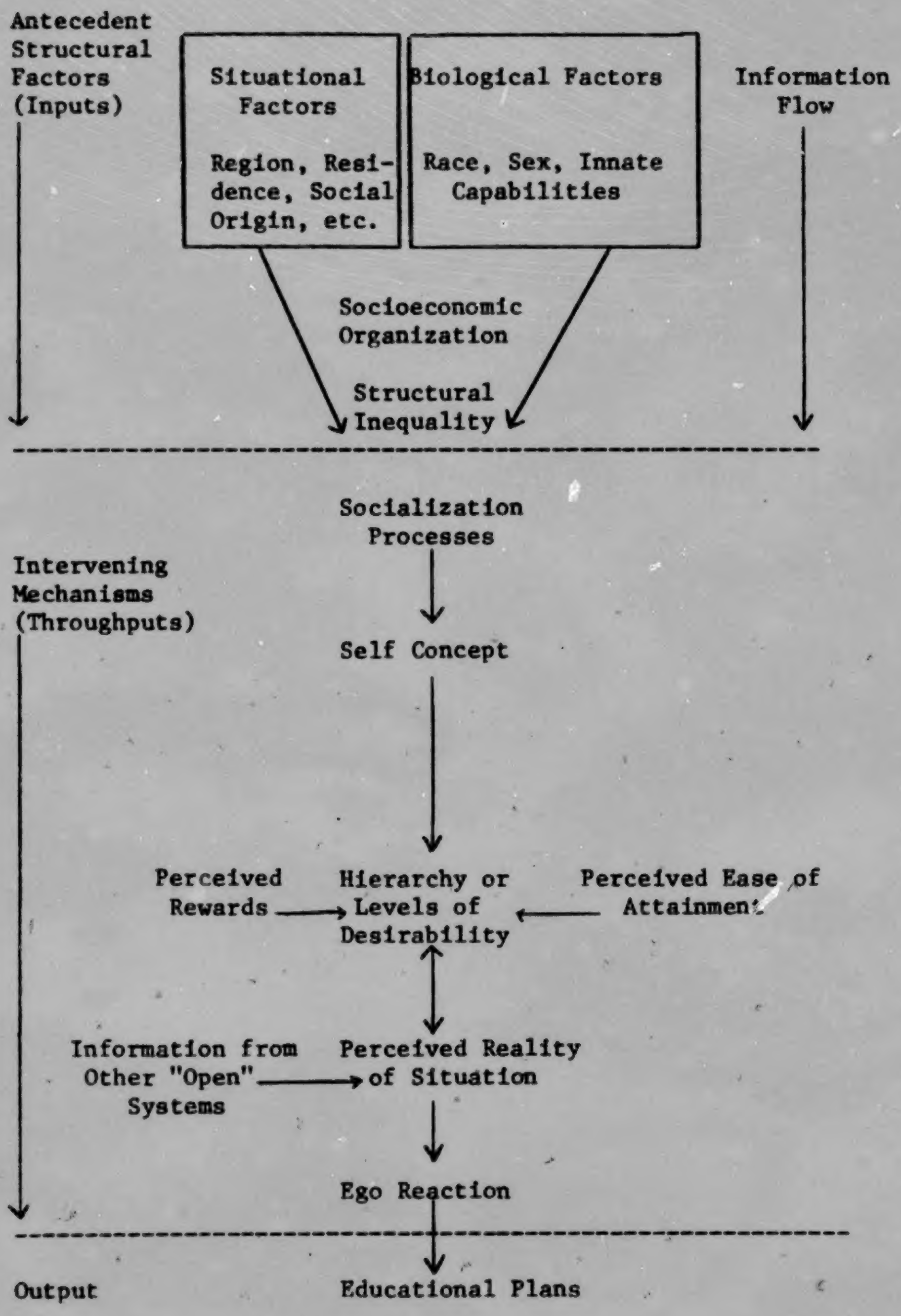
But obviously, socialization is a multifarious process involving a number of variables, and therefore, no two personalities are identical (cf. Bertrand, 1972:7). Although individual variation does occur, socialization nevertheless corresponds quite closely to structural information about the individual and his/her situational context.

A logical consequence of developing a self concept is an individual's perception of reality (Falk, 1975). Given the systemic flow of information from social structure to the development of a personality, this perception should be similar for those individuals who share particular structurally defined attributes. This perception of reality is intimately associated with a mentally constructed ranking or hierarchy of goal options. These goal options are ranked according to rewards and ease of attainment, and then, in consideration of all relevant information transmitted to the personality, the individual undergoes a "compromise process" which results in a selection of one of the possible options available (Falk, 1975). To temper this highly abstract account of the process of goal selection, a more systematic framework is spelled out to specify a number of processual components and to depict the informational flow from antecedent structural variables to the development of a self concept and eventually to the formation of educational plans.

A Theoretical Framework for the Study of Educational Plans

A systems framework utilizing the aforementioned ideas can be devised for the study of educational plans. As depicted in Figure 1, an informational flow can be traced from antecedent structural components to personality compoents via socialization, and ultimately to educational plans. The systemic components can be conceptualized as inputs, throughputs and outputs thus emphasizing the processual nature of the relationships. Inputs are the youth (students) without coherent educational plans yet possessing biological and situational attributes which have structural relevance. The throughput mechanisms are processes including socialization and the development of a self concept, and the output is educational plans.

Figure 1. A Systems Framework of the Formation of Educational Plans


Antecedent Structural Factors (Inputs)
Situational Factors
Region, Residence, Social Origin, etc.
Biological Factors
Race, Sex, Innate Capabilities
Information Flow
Socioeconomic Organization
Structural Inequality
Socialization Processes
Intervening Mechanisms (Throughputs)
Self Concept
Perceived Rewards
Hierarchy or Levels of Desirability
Perceived Ease of Attainment
Information from Other "Open" Systems
Perceived Reality of Situation
Ego Reaction
Output
Educational Plans

Briefly, a number of specific factors have been isolated as key determinants of educational plans and thus deserve some elaboration in a systems context.

Antecedent Structural Factors (Inputs)

As mentioned earlier, there are two types of structural factors which are meaningful in this analysis: biological and situational. Before identifying the specific variables that will be considered within each of these two categories, several characteristics of structural factors should be noted. First, as mentioned before, these factors occur external to the individual's control, yet dictate information which has relevance for the individual (Bertrand, 1972:7). Secondly, as "givens" in this process, they force a degree of constraint or liberation upon the individual. Thirdly, these factors are not mutually exclusive but rather they are highly interactive among themselves. Finally, although relatively fixed, the structural meaning attached to these factors can, and will, change over time depending on external conditions and informational feedback (Buckley, 1967; Berrien, 1968; Bertrand, 1972).

Biologically determined variables (Bertrand, 1972:7) which have structural relevance for the individual are race, sex and innate capability[2] (cf. Falk, 1975). As mentioned previously, these biological characteristics serve to categorize an individual into social groups with structural meaning (in terms of values, norms and role expectations) attached to them. Constraints follow accordingly. For example, perhaps a white male with favorable innate capabilities (e.g., high mental capacity and no physical handicaps) will have fewer structurally defined constraints limiting educational opportunity than a black female with unfavorable innate capabilities.

---

[2] Innate capability is employed in a broad sense to include mental as well as physical attributes and capacities which serve to categorize an individual.

The second group of structurally defined factors are the situational ones (Bertrand, 1972:7). Specifically relevant variables included under this rubric are factors such as region, residence and social origin. Region is defined as a specific geographical subsector within some larger more encompassing geographical sector. For example, living in Region Z of the country may be a constraining factor, but living in State X of Region Z may be more constraining than say State Y of Region Z, and furthermore, living in School District W of State X may be an even further constraint on educational opportunities.

Residence is a logical extension of region, although more specific (i.e., usually relating to a homestead), and again relates to an opportunity structure (see Sewell et al., 1970; Picou and Carter, 1976). For example, Lipset (1955) suggested that lower levels of attainment (educational and occupational) of rural youth might be attributed to lower aspirations resulting from a dearth of environmental influences favorable to high attainment.

A final factor is social origin which is defined as a relative socioeconomic status which may engender or limit a youth's educational plans (see Sewell and Shah, 1968a; Bayer, 1969a; Sewell et al., 1969; Sewell et al., 1970; Woelfel and Haller, 1971; Picou and Carter, 1976).

This is a multifaceted concept which includes dimensions such as parental education (inferring a particular educational value climate), major family income-earner's occupational status, family income, number of siblings, available resources, etc.

The involvement of these biological and situational variables with structural inequality (Falk, 1975) is illustrated in Figure 1. Structural inequality refers to a constraining opportunity structure that may affect subsequent processes and educational outcomes (cf. Jencks et al., 1972:Ch. 5). In a number of instances, the biological and situational factors hold no inherent relevance for education, but when they are fused with structural meanings, conditions such as structural inequality emerge.

Besides structural inequality, Peter Blau and his associates (1956) have stressed the relevance of the basic socioeconomic organization of a society on occupational plans, but its significance transcends the occupational boundaries (cf. Falk, 1975). One example of this phenomenon is the educational prerequisites for certain jobs. Within a highly differentiated occupational structure, educational prerequisites are intended to represent a certain level of competency prior to entry into a specialized job. Another example is the increasing diversity of educational options presently open to the individual. Youth now have a wider variety of alternatives available to them relative to educational options past high school graduation.

In sum, the biological and situational attributes of the youth are inputs in this systems process due to their structurally defined relevance. The information accorded these attributes largely determines subsequent systemic processes. Any consideration of the formation of educational plans which neglects these factors is obviously oversimplified.

Intervening Mechanisms (Throughputs)

Socialization Processes. The informational flow from the structural to the personality level is channeled through the processes of socialization. Succinctly stated, socialization involves developmental changes in personalities, through communication, in emotionally significant relationships which are shaped by social groups of varying scope (Elkin and Handel, 1972:28). With reference to educational plans, a number of these emotionally significant relationships have been empirically documented in the literature. Those with whom we interact have been dichotomized as either general or significant others. Significant others are those individuals with whom there exists a strong emotional attachment, while general others are less emotively attached. It is the former which is of concern here. Parents (Kahl, 1953; Bordua, 1960; Herriott, 1962; Rehberg and Westby, 1967; Kandel and Lesser, 1969; Carter, 1972; Rehberg and Hotchkiss, 1972; Alexander and Eckland, 1974; Picou and Carter, 1976), peers (Kahl, 1953; Haller and Butterworth, 1960; Herriott, 1963; Alexander and Campbell, 1964, Krauss, 1964; McDill and Coleman, 1965; Slocum, 1967; Kandel and Lesser, 1969; Carter, 1972;

Alexander and Eckland, 1974; Picou and Carter, 1976), *teachers* (Herriott, 1963; Alexander and Campbell, 1964; Rehberg and Hotchkiss, 1972; Carter, 1972; Alexander and Eckland, 1974; Picou and Carter, 1976) and *guidance counselors* (Herriott, 1963; Alexander and Campbell, 1964; Rehberg and Hotchkiss, 1972) are among those having a significant influence on the formation of educational plans. Each of these socializing agents wields a different type and degree of influence upon a youth depending on the role relationship and the expectations involved in the situation (cf. Bertrand, 1972).

Of course, interaction with these significant others is not the only facet of socialization. Another key aspect of socialization is modeling, which refers to the emulation of the behavior of some significant other (Kelly, 1952; Merton, 1957; Herriott, 1965; Woelfel and Haller, 1971; Picou and Carter, 1976). With reference to educational plans, close friends are commonly cited as role models. Without a doubt the individual learns information necessary to function within society through countless other experiences, but these examples involving communication and modeling are nonetheless crucial to the development of educational plans.

Self Concept. The development of the "self" is the outcome of socialization according to George Herbert Mead (1934). Although the "self" can be viewed as an output within this framework, it also serves as a mediating influence on educational plans when the latter is taken as an output. The formation of a self concept is a product of the development of the personality and is defined as that organization of qualities that an individual attributes to himself (Kinch, 1972:246). Even such basic qualities as sex and race are reflected in a self concept and the social meaning attached to them has to be learned. Obviously, the relationship with socialization is important, for it is through these processes that information is transmitted. Information from all of the antecedent structural factors mentioned in the previous section is included in a self concept. An individual is aware of his/her race, sex, region, social origin, etc. and this awareness results in two other components within this system which bear upon the formation of an educational plan. The first component is a mental ranking or hierarchy of possible educational plans in terms of desirability and the second component is a perceived reality of the situation.

Hierarchy of Desirability and Perceived Reality of Situation. This hierarchy or level of desirability of educational options is the next outcome of this informational flow (see Figure 1). The individual will compose a mental ranking of educational options in terms of desirability which is contingent upon anticipated rewards and ease of attainment. But more than this, the ranking is contingent on the self concept and a perceived reality of the situation and will result in a consideration of the possible educational options against available information about the self. Due to structural conditions, this perceived reality situation can be expected to vary between social groups and therefore to some degree, so would educational plans.

Output and Interaction With Other "Open" Systems

After formulating and confronting this mental hierarchy the youth will selectively choose, through a compromise process (cf. Falk, 1975), a particular choice from among the educational possibilities. For one particular person, it may be graduate school, for another it may be vocational-technical training; but whatever it is, it represents a developmental choice in contemplation of information which is passed down through a systemic flow.

A final condition which may bear heavily upon any educational choice is information from other outside "open" systems (Bertrand, 1972:96). An "open" system accepts and responds to outside inputs such as information and depending on the nature of the information, alterations in the perceived reality situation may result. For example, if a youth desires to get married early in life and have a large family, he/she may curtail his/her plans for education, and in reciprocal fashion, pursuing educational plans may curtail certain marital and fertility plans (Matthews and Tiedeman, 1964). In other words certain "trade offs" or exchanges among career plans may have a bearing upon educational plans. For example Psathas (1968), Alexander and Eckland (1974) and Falk and Cosby (1975) have suggested the potential relevance of marital and fertility plans on this process.

Methodological Considerations of the Theoretical Framework

One of the purposes of this study was to develop a theoretical framework and utilize it in an evaluative capacity. To this end the framework must have a methodological application and systems theory offers some advantages on this very point. A logical temporal flow is postulated between the systemic components. Furthermore, this framework permits a causal specification of the various factors to be made. The temporal nature of the information flow and the specification of the variables enables certain factors to be viewed as dependent on others. In the present research, the antecedent structural factors are independent variables; the intervening mechanisms are dependent on the structural factors, but independent relative to their effect on educational plans which is the final dependent variable.

Path analysis (Duncan, 1966; Heise, 1969; Land, 1969) enables such a causal chain to be empirically examined (see Chapter V). The structural variables are treated either as exogenous variables or as sample characteristics. For example, social origin (Sewell and Shah, 1968a; Bayer, 1969a; Sewell et al., 1969; Picou and Carter, 1976) is usually treated as an exogenous variable, while residence (Sewell et al., 1970; Picou and Carter, 1976) is commonly treated as a sample characteristic.

Indirect measures of socialization have been viewed as mediating or intervening variables in most previous models of educational plans (see the following chapter) while the development of the self concept has been largely ignored due to the conceptual and methodological problems.[3] Educational plans, as an output, is treated as a dependent variable, the result of a cumulative process of the aforementioned factors.

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[3] Alexander and Eckland (1974), in a retest of the Sewell and Shah (1968a) hypothesis, did employ "Academic Self Concept" as an intervening mechanism and found that the variable did not successfully predict educational expectations.

The only major methodological difficulty of systems theory is the relationship of information from other "open" systems. Specification and temporal ordering problems inhibit the role of this source of information in most instances (cf. Schoenberg, 1972). But overall, the theoretical framework lends itself quite adequately to most methodological issues.

The logic underlying the systems framework can be readily observed in several previous models of the formation of educational plans. Path analytic techniques have enabled researchers to trace the informational flow from antecedent structural inputs to educational plans. In the following chapter, several of these models are reviewed to point out this informational flow and to provide a basis for a proposed model to be tested empirically.

CHAPTER III

REVIEW OF EXISTING MODELS OF THE FORMULATION OF EDUCATIONAL PLANS

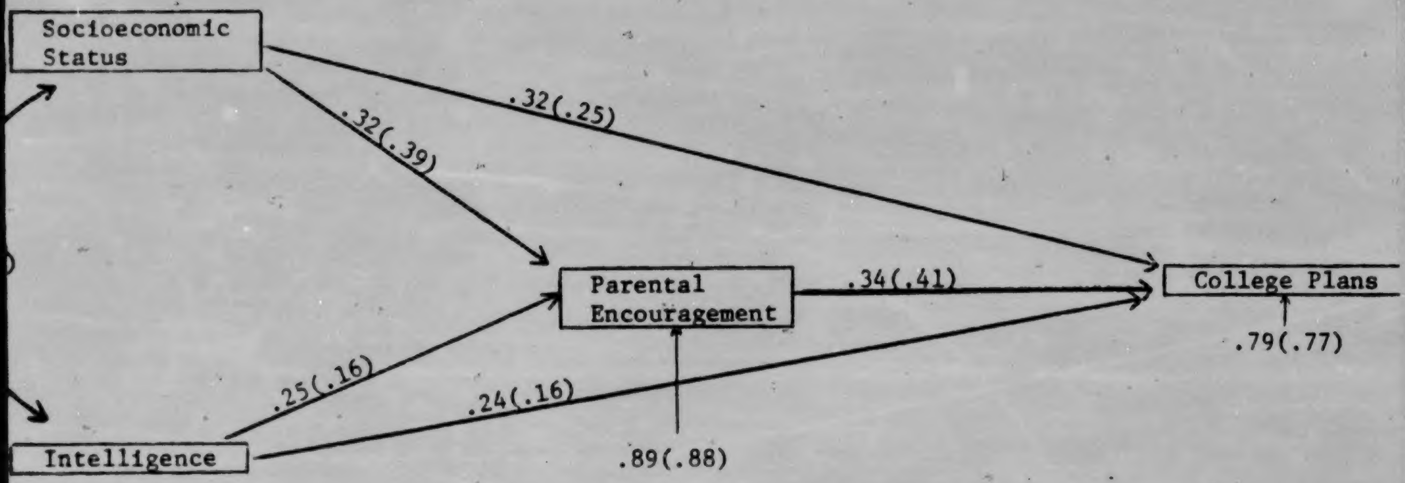
Since the onset of causal modeling in sociology, several theoretical models of educational plans have been formulated. It is the intent in this chapter to review several of these models to emphasize contributions, limitations and trends. The models covered by no means exhaust all the existing ones, but rather exemplify the direction this research domain has taken. Each model presented contains certain alterations and modifications over the previous one(s) and therefore they are reviewed chronologically. Another purpose of this chapter is to demonstrate the applicability of the theoretical framework to several existing models of the formation of educational plans. A proposed model which draws heavily from these previous models as well as from the theoretical framework will be presented at the end of the chapter.

Models of Educational Plans

The Sewell and Shah Model

William Sewell and Vimal Shah (1968a) developed a theoretical model to show the direct and indirect influences that socioeconomic status, measured intelligence and parental encouragement have on college plans (see Figure 2). According to the model, predetermined social-structural and psychological variables, i.e., socioeconomic status and measured intelligence, directly influence college plans

Figure 2. The Sewell and Shah Model of the Formation of College Plans


Socioeconomic Status
.32(.25)
.32(.39)
Parental Encouragement
.34(.41)
College Plans
.79(.77)
.25(.16)
.24(.16)
Intelligence
.89(.88)

Female path coefficients in parenthesis.

Source: Sewell and Shah, 1968a:567.

as well as perceived parental encouragement which in turn, also influences college plans (see Table 1). Thus, for example, youth from higher social class origins are more likely to aspire to higher educational goals than are children of lower social class origins partially because of greater parental encouragement to do so (Sewell and Shah, 1968a:560). This contention was supported by the rather sizeable path coefficients ($p = .34$ for males, $p = .41$ for females) between perceived parental encouragement and educational plans of Wisconsin youth. In total, the model accounted for 37% of the variation in college plans for males and 41% for females. The path coefficients for virtually all of the hypothesized paths were impressive, ranging from $p = .24$ to $p = .34$ for males and $p = .16$ to $p = .41$ for females.

In light of the theoretical framework presented in the previous chapter, the antecedent structural variables (or inputs) in the Sewell and Shah model were socioeconomic status, intelligence and sex of the respondent. The first two of these were treated as exogenous variables in the path model and the last one was treated as a sample characteristic. A socialization measure, perceived parental encouragement, was the throughput mechanism and the final output was college plans (a dichotomous option). The temporal flow was logical and in basic accordance with the theoretical framework, but several of the variables were somewhat nebulous and incomplete. For example, the variable "socioeconomic status" was based on a weighted combination of father's occupation, parental education, an

Table 1. Summary of Several Existing Models of Educational Plans and the Variables Examined

Models	Variables			
	Antecedent Structural Variables		Intervening Variables	Dependent Variables
	Exogenous Variables	Sample Characteristics		
1. Sewell & Shah Model (1968a)	Socioeconomic status, intelligence	Sex	Perceived parental encouragement	College plans
2. "Wisconsin Model" (1969, 1970)	Socioeconomic status, mental ability	Residence (five residential categories in 1970)	Significant others' influence (index of perceived parental, peer and teacher's encourage), academic performance	Level of educational aspiration
3. Bayer Model (1969a)	Socioeconomic status, aptitude	Sex	Marital plans (expected age at marriage)	Educational aspirations
4. Woelfel & Haller Model (1971)	Father's occupation		Significant others' mean educational expectations, academic performance*	Educational aspirations

(Table 1 - to be continued)

(Table 1 - continued)

Models	Variables			
	Antecedent Structural Variables		Intervening Variables	Dependent Variables
	Exogenous Variables	Sample Characteristics		
5. Picou & Carter Model (1976)	Father's education, Mother's education, Father's occupation	Residence (five residential categories)	Grades, parental encouragement, teachers' encouragement, friends' encouragement and peer modeling	Educational aspirations
6. Proposed Model	Father's education, Mother's education, Income-earner's occupation	Sex	Perceived parental encouragement, perceived teachers' encouragement, perceived guidance counselor's encouragement, perceived friends' encouragement, close friends' college plans	Educational plans; marital plans**, fertility plans**

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*In feedback relationship (see Figure 5).

**Associated with educational plans.

estimate of the funds the family could provide if the student were to attend college, the degree of sacrifice this would entail for the family and the approximate wealth and income status of the youth's family (Sewell and Shah, 1968a:562). Although adequately measured, this term could have been disaggregated to illuminate component effects.[4] The intervening mechanism implies socialization but it was limited to perceived parental encouragement, thus leaving open the contributions of other socializing agents. Finally, college plans, the dependent variable, was dichotomous, thereby ignoring other post-high school educational options which are available in contemporary American society.

Otherwise, this model established a logical precedent for subsequent modeling attempts and demonstrated that perceived parental encouragement is a significant intervening variable between social background, intelligence and college plans. On a final note, very similar sex-related processes of college plan formation were found when this model was used but these comparisons are questionable because comparing path coefficients between two samples confounds differences in the variances of the variables being considered (see Schoenberg, 1972).

The "Wisconsin Model"

The second theoretical model to be developed relative to educational plans was the so-called "Wisconsin Model" of status attainment (Sewell et al., 1969; Sewell et al., 1970). Although not addressing educational aspirations[5] as a final dependent variable; a submodel which does so can be extracted to provide a marked improvement over the Sewell and Shah (1968a) model. As depicted in Figure 3, the variables employed in this model were socioeconomic status, mental ability, significant others' influence, academic performance and level of educational aspiration (Sewell et al., 1969; Sewell et al., 1970). The major improvement reflected in this model over the Sewell and Shah model (1968a) was that the variables used were measured more precisely. Socioeconomic status, significant others' influence and level of educational aspiration were all more "efficiently" measured. Academic performance was the only new variable incorporated and was found to produce a strong positive effect ($p = .32$) on significant others' influence and a moderate influence ($p = .22$) on level of educational aspiration (Sewell et al., 1970).

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[4] In another article Sewell and Shah (1968b) did focus on the effects of parental education on educational aspiration and found a positive significant relationship.

Theoretically, for Sewell and his colleagues, the rationale underlying the hypothetical specification was as follows. The influence of mental ability on academic performance is important because significant others base their expectations on demonstrated abilities as they see them in academic performance rather than in the less obvious indications of mental ability (Sewell et al., 1969: 85; Sewell et al., 1970:1015). Besides academic performance,

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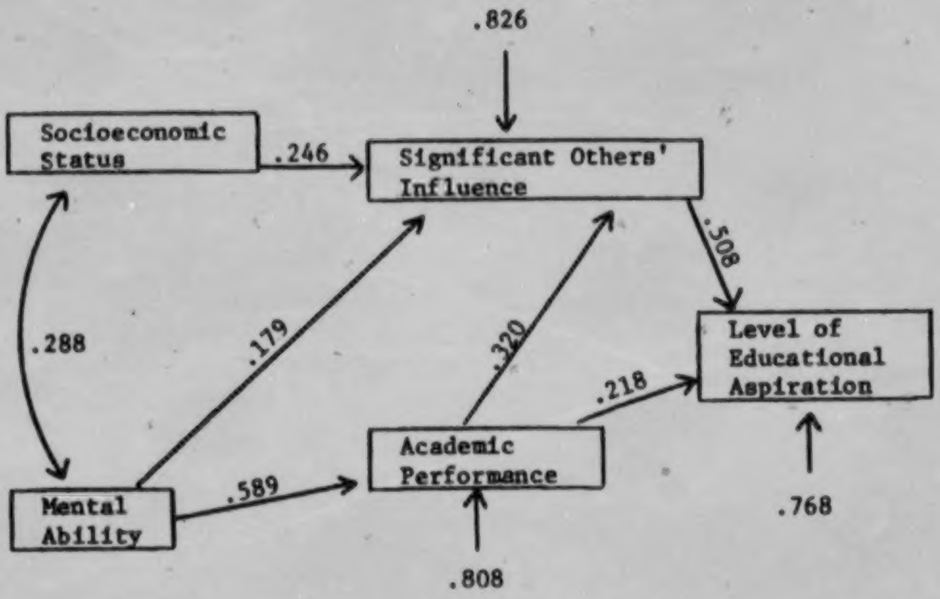
[5] With this second model, the dependent variable was reconceptualized thereby necessitating a change in terminology.

Figure 3. The "Wisconsin Model" of Level of Educational Aspiration Formation


.826
Socioeconomic Status
.246
Significant Others' Influence
.288
.179
.320
.508
Level of Educational Aspiration
.218
Academic Performance
Mental Ability
.589
.768
.808

Path Coefficients for Total Sample

Source: Sewell et al., 1970:1023

socioeconomic status should have a direct bearing on significant other influence because the higher a person's socioeconomic status, the higher will be the socioeconomic status of those with whom he interacts and the more likely they will be to elicit expectations in accordance with the individual's status position (Sewell et al., 1970: 1015).

By definition, significant others are those persons who exert the greatest influence upon the youth and therefore, a youth's level of educational aspiration should be fairly consistent with the status level expected of him or exhibited to him by his significant others (Sewell et al., 1970:1015). The other path to level of educational aspirations was that from academic performance. The researchers (Sewell et al., 1970:1016) admitted that the moderate-sized path coefficient ($p = .218$) suggested that perhaps another mediating factor such as self conception of one's ability accounts for this finding, and the systems framework specified in the previous chapter lends support to this contention.

Overall, the model is consistent with the rationale outlined in the preceding chapter (see Table 2). The structural variables given consideration were socioeconomic status, mental ability and residence. Again, the first two were treated as exogenous variables in the path model and the last one (a situational variable) was treated as a sample characteristic. The informational flow was mediated by significant others' influence and academic performance, and concluded with a level of educational aspiration. Six causal paths were hypothesized and together they accounted for 31% of the variance in the levels of educational aspiration for the total sample of Wisconsin males.

In support of Sewell and Shah's (1968a) major contribution, the path coefficient from significant others' influence to level of educational aspiration was quite sizeable (p. = .508), thus reconfirming the utility of socialization type measures in models of educational plans. Another finding of importance was the applicability of the model to respondents from a variety of urban and rural residential backgrounds. Although the direct comparisons of the path coefficients between the residential categories were questionable (cf. Schoenberg, 1972), the within-category utility was confirmed, nevertheless.

On a critical note, although a broader spectrum of significant others was included than in the Sewell and Shah model (1968a), the use of a cumulative significant other index masked specific socializing influences (see Hauser, 1971). Furthermore, the socioeconomic status elements were also aggregated.

The Bayer Model

Soon after the first "Wisconsin Model" (1969) has been published, Alan Bayer (1969a) presented a recursive path model which included a new, but problematic, variable not previously utilized as an independent variable influencing educational aspirations. The variable in question was marital plans (expected age at marriage) and mediated the influence of aptitude and socioeconomic status on educational aspirations (see Figure 4).

Although Bayer (1969a:239) did not address the theoretical implications of this type specification, he nevertheless concluded that a previous study (Bayer, 1969b) was "suggestive" of a possible strong independent influence exerted by marital plans on educational aspirations. But in that previous study (Bayer, 1969b), the causal relationship was reversed and marital plans was dependent on educational aspirations.

The systems framework posited in the previous chapter, while not addressing marital plans specifically, does make a provision for an outside informational flow from interaction with other "open" systems (Bertrand, 1972). But specifying such a uni-directional influence is tenuous at best and making an "undebatable"[6] theoretical argument is next to impossible (cf. Schoenberg, 1972).

This is not to suggest that marital and educational plans are not intimately associated--quite the contrary--and Bayer's work (1969a; 1969b) supports such a relationship.[7] Additionally, the influence of both exogenous variables (socioeconomic status and aptitude) on educational plans was further supported for both sexes, but like the Sewell and Shah model, direct comparison of path coefficients is problematic (cf. Schoenberg, 1972). For males, the path from socioeconomic status to educational aspirations was .228

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[6] Heise (1969) stressed that a major assumption of path analysis is that the causal laws governing the system are established sufficiently to specify the causal priorities among the variables in a way that is undebatable.

[7] Some more recent attempts (Carter, 1972; Kirklin, 1974) further document a relationship between marital plans and educational plans.

and for females it was .250. For the path from aptitude to educational aspirations, the coefficients were .435 and .301 for males and females, respectively. Using Project TALENT data, approximately 40% of the variance in the dependent variable was accounted for by the three predictor variables.

But overall, the model was limited by a number of weaknesses. "Socioeconomic status" again was not disaggregated, there were no socialization measures and the variable specification was problematic, but the intuitive appeal of marital plans was nonetheless important.

The Woelfel and Haller Model

Reacting to theoretical and methodological shortcomings of previous work, Woelfel and Haller (1971) presented a non-recursive model which, to some degree, was concerned with educational aspirations. The non-recursive feature of the theoretical model was designed to elaborate on the attitude formation process with reference to educational aspirations.

The authors charged that previous researchers had not detected the exact significant others which are important in exercizing influence over the attitudes of individuals, or measured their expectations for the individuals in question, or compared these expectations with other variables of known effect on the attitudes of youth (Woelfel and Haller, 1971:75). Their research addressed these issues.

Theoretically, the Woelfel and Haller model, like the others, assumed that structural factors influence the kinds of significant others to which ego is exposed and the kinds of information that those significant others communicate to ego; and that information, along with what ego can observe from his own activities (self-reflexive), provides the basic corpus from which he sets his attitudes (Woelfel and Haller, 1971:76). That information is evaluated in terms of its consistency with previously accumulated information and results in the new attitude (Woelfel and Haller, 1971:76).

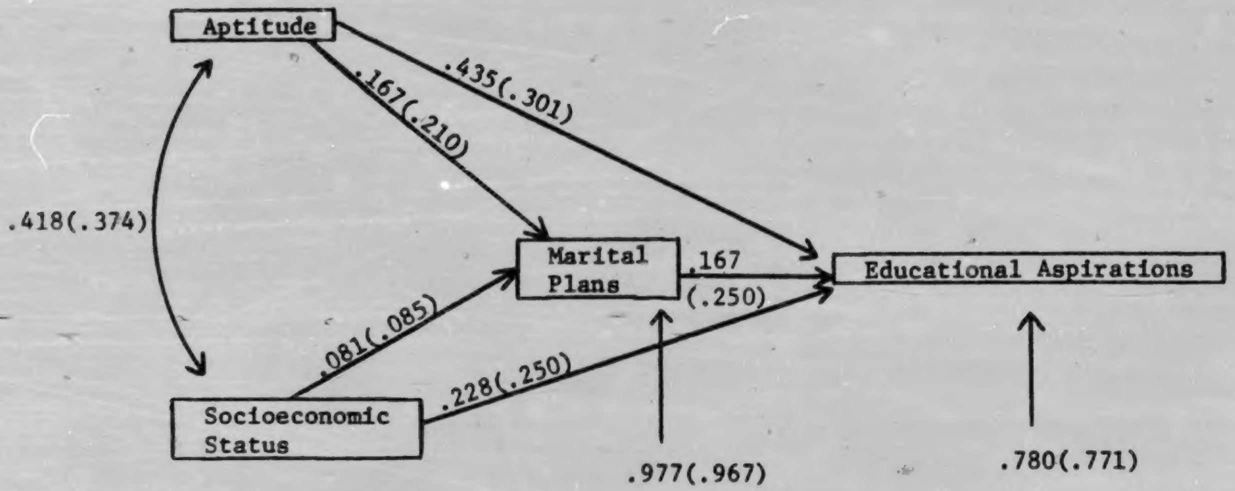
To address this position, the Woelfel and Haller model posited that father's occupation directly influences significant others' mean educational expectations. Besides father's occupation, significant others receive feedback from an individual's academic performance which is assumed to provide a basis for expectations. Significant others' expectations were specified as influencing educational aspirations, which also receive feedback information from academic performance and are utilized in a self reflexive process (cf. Mead, 1934). Finally, educational aspirations were viewed as influencing academic performance.

This complex array of relationships, while providing an excellent example of systems feedback, was statistically problematic (see Land, 1971; Henry and Humman, 1971). Furthermore, although the model provided a more extensive conceptualization and measurement of significant others' influence, father's occupation was the sole exogenous structural influence that was included.

The Picou and Carter Model

Recently, Picou and Carter (1976) have detailed a more complete model of significant others' influence on educational plans (Figure 6).

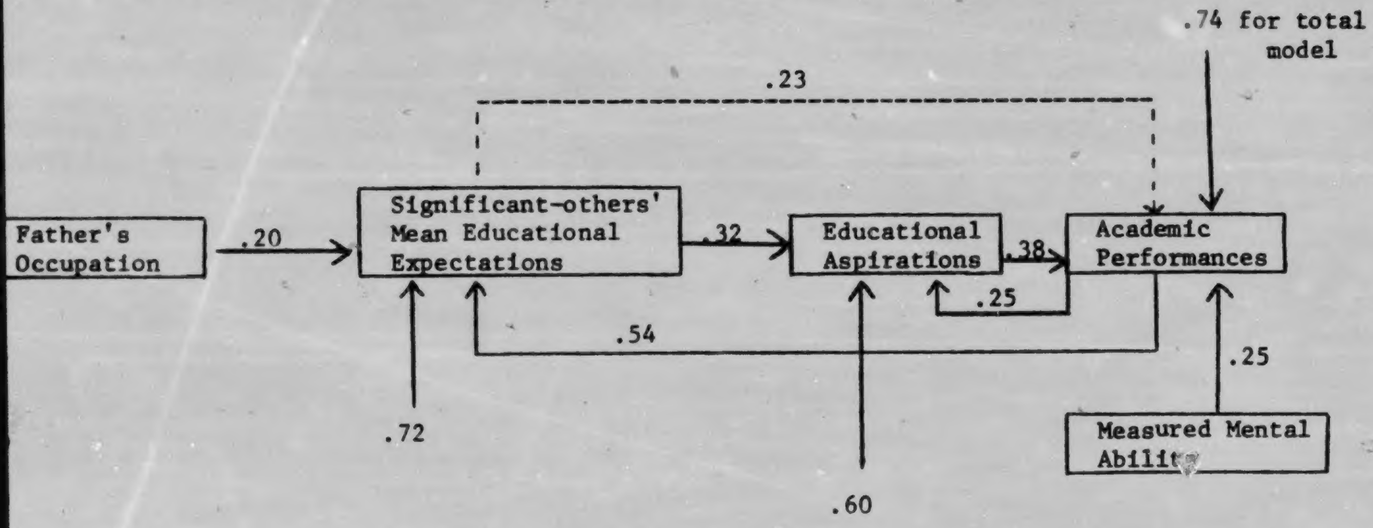
Figure 4. The Bayer Model of the Formation of Educational Aspirations


Aptitude
.435(.301)
.167(.210)
.418(.374)
Marital Plans
.167
(.250)
Educational Aspirations
.081(.085)
.228(.250)
Socioeconomic Status
.977(.967)
.780(.771)

Female path coefficients in parentheses.

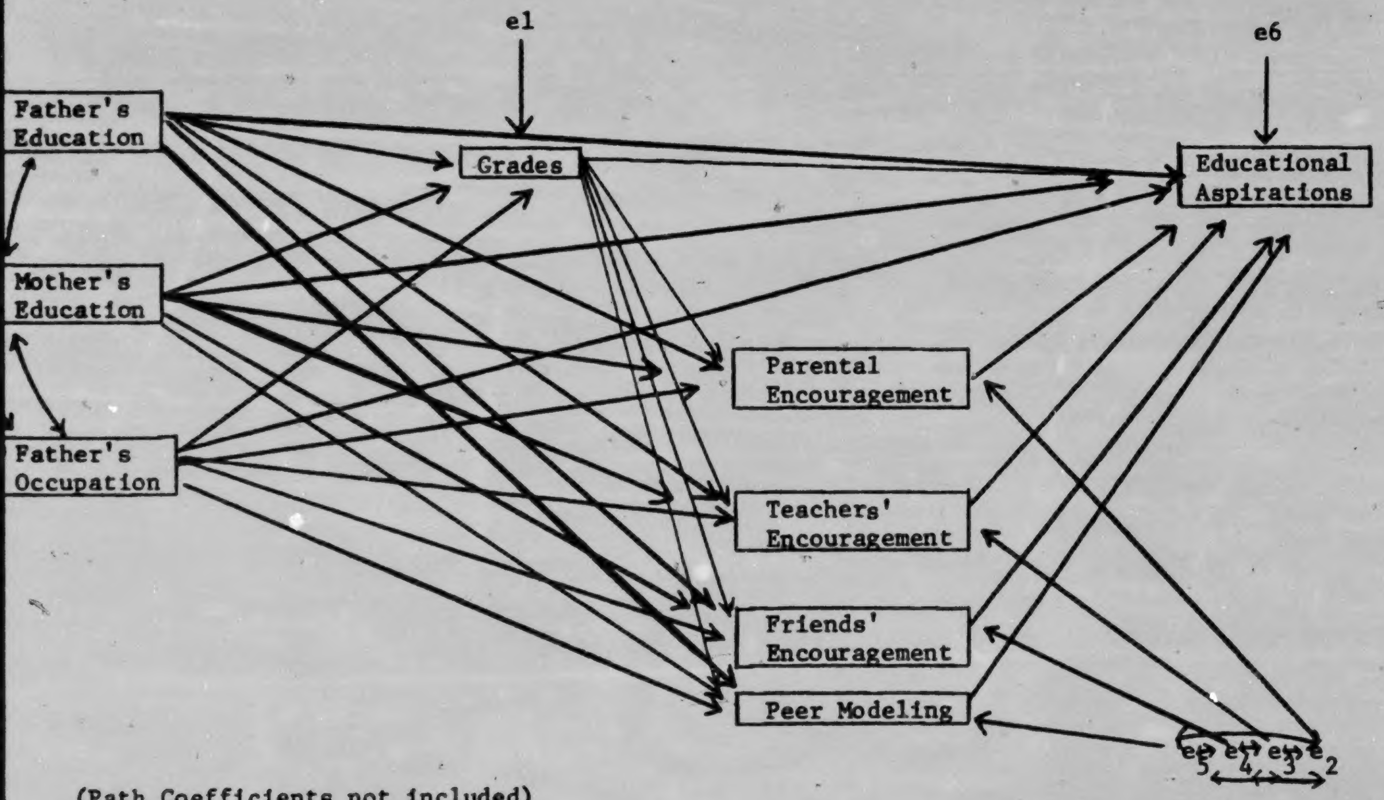
Source: Bayer, 1969a:242.

Figure 5. The Woelfel and Haller Model of the Formation of Educational Aspirations


.74 for total model
.23
Father's Occupation
.20
Significant-others' Mean Educational Expectations
.32
Educational Aspirations
.38
Academic Performances
.25
.54
.25
.72
Measured Mental Ability
.60

Source: Woelfel and Haller, 1971:80.

Figure 6. The Picou and Carter Model of the Formation of Educational Aspirations


e1
e6
Father's Education
Grades
Educational Aspirations
Mother's Education
Parental Encouragement
Father's Occupation
Teachers' Encouragement
Friends' Encouragement
Peer Modeling
e5 e4 e3 e2

(Path Coefficients not included)

Source: Picou and Carter, 1976

Congruent with most previous research, this model linked structural factors to educational plans via one behavioral intervening component (grades) and an array of socialization directed measures.[8] The exogenous structural variables were father's education, mother's education and father's occupation with residence as an added structural (i.e., situational) sample characteristic. Besides disaggregating social origin into these three components, the use of multiple encouragement measures was another significant contribution. Perceived encouragement of parents, teachers and friends were all examined separately as "others" who hold actual expectations for ego. This so-called "definer" influence was contrasted with another socialization variable--"peer modeling"--to tap another dimension of others' influence (Kelly, 1952; Merton, 1957; Herriott, 1963; Woelfel and Haller, 1971). Overall, the logic of the model paralleled that of the systems framework presented in the previous chapter.

In its entirety, the recursive model accounted for 41% of the variance in educational aspirations for the total sample of Louisiana youth. The influence of the peer modeling variable on educational aspirations for all the residential categories was statistically significant ($p < .05$), thus demonstrating the plausibility of this alternative socialization influence. Furthermore, additional credence was added to the earlier finding with the "Wisconsin Model" (Sewell et al., 1970), that the basic relationships are applicable to a variety of different residences.

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[8] This model, overall, is very similar to a theoretical model developed by Nancy Carter (1972) to study the effects of marital status and sex on a social-psychological model of occupational status attainment.

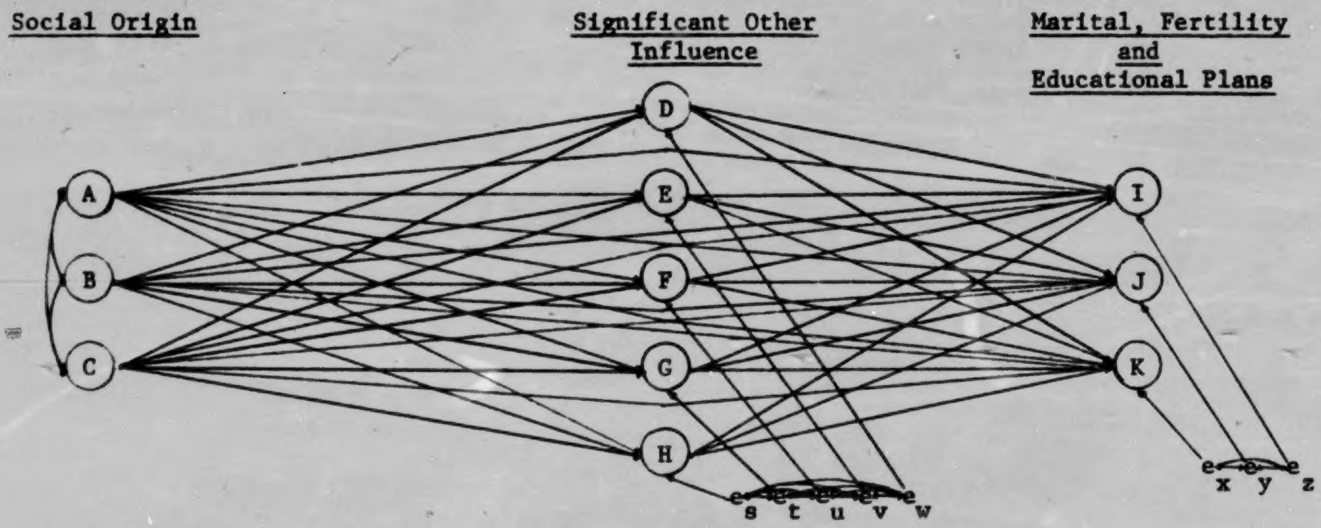
A Systems Model for the Study of Educational Plans

The logic underlying the theoretical framework of a systems approach and the previously reviewed models of educational plans, provide a rationale for developing a causal model of the formation of educational plans. The model that was developed is presented schematically in Figure 7. It is similar, in many aspects, to a number of the previously formulated models, but differs slightly in several important ways.

Following the sociological "truism" that structural factors are important determinants of socialization patterns and the development of a personality, the exogenous variables include father's education (A), mother's education (B), and the major family income-earner's occupation (C). Most of these variables correspond to the variables utilized by Carter (1972) and Picou and Carter (1976), with the exception of father's occupation, which is reconceptualized in this model as major family income-earner's occupation. This conceptualization includes those cases in which the father is absent or is not the major income-earner in the family. For certain analyses, sex (S) is also included as a categorical exogenous variable.

The intervening mechanisms are four perceived encouragement variables (D, E, F, G) and a peer modeling variable (H) consistent with Picou and Carter's (1976) findings. In addition to the three perceived significant others (parents, teachers and friends) cited by Picou and Carter (1976), guidance counselor's influence (cf. Herriott, 1963; Rehberg and Hotchkiss, 1974) is included as an additional variable.

re 7. Causal Diagram of a Recursive Systems Model for Estimating the Effects of Social Origin and Significant Other Influence on Marital Plans, Fertility Plans and Educational Plans[a]


Social Origin
Significant Other Influence
Marital, Fertility and Educational Plans
A
B
C
D
E
F
G
H
I
J
K
e e e e e
s t u v w
e e e
x y z

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[a] The variables are: A = father's education, B = mother's education, C = income earner's occupation, D = perceived parental encouragement, E = perceived teacher's encouragement, F = perceived guidance counselor's encouragement, G = perceived friends' encouragement, H = close friends' college plans, I = marital plans, J = fertility plans, K = educational plans.

Bayer's (1969a) work, although riddled with specification problems, nevertheless posed a viable question--What is the relationship of marital plans to educational plans? Fertility plans (cf. White, 1974) are an equally plausible variable to be considered. Both marital and fertility plans represent future considerations which may have a bearing on educational plans. Excluding these variables omits a potential source of influence and therefore marital (I) and fertility (J) plans along with educational plans (K) are included as dependent variables.[9] The rationale underlying this specification is that, although a unidirectional influence cannot be plausibly defended for any of the three variables, nevertheless all three can be temporally specified as occurring after the social origin and socialization variables. In this context, associational measures can be employed to give an indication of the interrelationship among the three.

An immediate limitation of this model is the lack of mental ability and academic performance variables. This is not an oversight but rather a limitation imposed by the data utilized. Nevertheless, the proposed model represents a cumulative effort to incorporate a wider spectrum of potential variables than has been the case previously. The following chapter is devoted to a review of the empirical literature on the relationship of sex to the dependent variables included in the proposed model.

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[9] The research supporting the influence of social origin and socialization on marital and fertility are not reviewed in this study. For a good review of literature on fertility plans see White (1974) and for marital plans, see Kirklin (1974).

CHAPTER IV

REVIEW OF EMPIRICAL LITERATURE ON THE RELATIONSHIP BETWEEN SEX AND THE FORMATION OF EDUCATIONAL PLANS

It is apparent that there exists a substantial amount of research on educational plans and their determinants.[10] Several theoretical models of the formation of educational plans, two of which were directly compared between the sexes, have already been presented. This chapter reviews the empirical literature which has examined the relationship between sex and the formation of educational plans.

In basic accordance with the theoretical framework, the literature is reviewed so that each conceptual area is examined as to its direct and indirect relationship with educational plans (see Table 2). This chapter is concluded with five hypotheses which are based upon the literature reviewed.

Social Origin and the Formation of Educational Plans

A consistent finding in the research on the formation of educational plans is that youth of higher social origins are more likely to desire or expect higher educational levels than are youth of lower social origins. A direct positive relationship between these two variable sets appears in analyses of both males and females, yet the relationship appears to be somewhat stronger for females than for males. That is, female educational plans seem to be more closely tied to ascribed social origin criteria. Sewell and Shah (1968a;

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[10] For a cumulative bibliography, see Kuvlesky and Reynolds (1970).

2. Summary of Selected Empirical Literature on Sex and the Formation of Educational Plans by Variables in the Proposed Model

pendent ables	Dependent Variables		
	Significant Other Influence	Marital & Fertility Plans	Educational Plans
al Origin ables	Sewell & Shah (1968a) Sewell & Shah (1968b) Carter (1972) Rehberg & Hotchkiss (1972) Alexander & Eckland (1974)	Bayer (1969a) Bayer (1969b)	Sewell & Shah (1968a) Sewell & Shah (1968b) Bayer (1969a) Bayer (1969b) Carter (1972) Rehberg & Hotchkiss (1972) Alexander & Eckland (1974)
ificant Other uence ables			Bordua (1960) Sewell & Shah (1968a) Sewell & Shah (1968b) Carter (1972) Rehberg & Hotchkiss (1972) Alexander & Eckland (1974)
ital & tility Plans			Bayer (1969a) Bayer (1969b)

1968b) support this basic contention of a stronger female relationship by rather sizeable associational, predictive and cross-tabular measures, even after controlling for the mediating influence of parental encouragement. In explaining this finding, Sewell and Shah (1968a:571) reason that the effects of sex-role expectations are such that female educational aspirations are generally lower than those of males and are somewhat more sensitive to socioeconomic background. Alexander and Eckland (1974:680), in a recent retest of the Sewell and Shah (1968a) thesis, substantiated their findings and likewise suggested that possibly sex-role socialization may be important in accounting for these differences.

Stronger relationships between social origin measures and educational plans for females than for males were found in three other studies (Bayer, 1969a; 1969b; Carter, 1972). The only discrepant finding was by Rehberg and Hotchkiss (1972), who found a slightly larger fifth-order partial correlation for males ($r = .33$) than for females ($r = .26$), but the slightly male advantage was left uninterpreted by the authors.

Virtually all of the research on the relationship of social origin to educational plans, regardless of the sex of the sample has shown a moderate to strong positive relationship (Sewell et al., 1957; Bordua, 1960; McDill and Coleman, 1965; Boyle, 1968; Rehberg and Westby, 1967; Sewell and Shah, 1968a, 1968b; Bayer, 1969a, 1969b; Sewell et al., 1969; 1970; Woelfel and Haller, 1971; Carter, 1972; Rehberg and Hotchkiss, 1972; Alexander and Eckland, 1974; Picou and Carter, 1976). But most researchers have acknowledged that the influence of social origin on educational plans is indirect and is mediated by socialization variables, and in particular, significant other influence.

This leads to another consistent finding which seems to be that the higher a youth's social origin, the greater the amount of significant other encouragement. Haller and Portes (1973:62) reason that a youth's social origin sets limits not only on the pool of significant others, but also on the nature of their orientations and expectations. Overwhelming support for this assertion has been provided by the literature (Sewell and Shah, 1968a; 1969b; Sewell et al., 1969; 1970; Woelfel and Haller, 1971; Carter, 1972; Rehberg and Hotchkiss, 1972; Alexander and Eckland, 1974; Picou and Carter, 1976). This finding seems to hold for both males and females, although perhaps in absolute terms the amount of encouragement slightly favors males.

In both of their studies, Sewell and Shah (1968a; 1968b) examined perceived parental encouragement as intervening between social origin and educational aspirations and they found highly significant relationships among the variables. Although the authors conclude that the effect of socioeconomic status on parental encouragement is greater for girls than for boys, such a direct comparison of path coefficients is statistically problematic (cf. Schoenberg, 1972). Nevertheless, strong positive associations were observed within separate analyses. Furthermore, perceived parental encouragement was found to mediate the direct effect of social origin on educational aspirations.

Carter (1972), likewise, found sizeable positive relationships between social origin and three significant other influence variables, again, favoring neither sex. Rehberg and Hotchkiss (1972) found slight but similar zero-order correlations between socioeconomic status and parental, teachers' and counselor's educational encouragement. An interesting finding was that within models for each sex, the influence of socioeconomic status was greater for counselor's educational encouragement than for the remaining two significant other variables.

In a more recent article which incorporated sex as an exogenous "dummy" variable, Alexander and Eckland (1974) found a "trivial" negative consequence of being female on parental encouragement, yet a "trivial" advantage of being female on peers' and teachers' influence. Comparing unstandardized regression coefficients for the effect of socioeconomic status on significant other influence, those for females were significantly larger than for males.[11] Overall, the research supports the intervening role of significant other encouragement and the positive relationship between social origin and the various encouragement measures, yet sex differences, especially those derived from direct comparisons of path coefficients, are somewhat unclear.

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[11] Alexander and Eckland (1974:679) admit that there is no formal statistical standard for imputing substantive importance to the between sex differences in coefficients. However, differences of approximately .10 or greater between unstandardized regression coefficients were considered significant.

Significant Other Influence and the Formation of Educational Plans

In this second section the research which examined significant other influence and educational plans will be reviewed. As mentioned in the previous discussion, a number of different significant others have been identified and examined as to their potential influence on educational plans. Parents, peers, teachers and guidance counselors are the specific socializing agents who have received the most attention in previous research. Underlying the concept of significant other influence is the assumption that the more encouragement toward a certain educational plan an adolescent perceives, the more likely he/she will be to express a definite intention to pursue it.

Of the four primary significant other groups, parental encouragement has been analyzed most extensively. The relationship between parental encouragement and educational plans has been well documented in the literature for variety of samples (Kahl, 1953; Bordua, 1960; Herriott, 1963; Rehberg and Westby, 1967; Sewell and Shah, 1968a; 1968b; Kandel and Lesser, 1969; Carter, 1972; Rehberg and Hotchkiss, 1972; Alexander and Eckland, 1974; Picou and Carter, 1976). Bordua (1960) discovered that the greater college orientation of males was "substantially reversed" when parental stress was controlled, thus implying the significance of parental influence.[12] Additionally, he found a greater male predominance at high parental stress levels and a female predominance more at lower stress levels (Bordua, 1960: 269).

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[12] Sewell and Shah (1968a:501) caution that Bordua's conclusion should be viewed with reservations because he did not control for all variables simultaneously.

Sewell and Shah (1968a) found that parental encouragement accounted for roughly one-fourth of the variance in the college plans for boys and about one-third of the variance for girls. The findings in their second article (Sewell and Shah, 1968b) added credence to this strong relationship, although the zero-order correlations were more similar between the sexes.

Carter (1972), along with Rehberg and Hotchkiss (1972), also observed similar positive associations between the two variables for both sexes. Carter (1972) also found "similar", i.e., not greater than .10 difference, unstandardized regression coefficients for males and females.

Like parental encouragement, peer encouragement is another variable which has prompted considerable research. While a substantial amount of research has focused on this relationship (Kahl, 1953; Haller and Butterworth, 1960; Herriott, 1963; Alexander and Campbell, 1964; Krauss, 1964; McDill and Coleman, 1965; Kandel and Lesser, 1969; Carter, 1972; Alexander and Eckland, 1974; Picou and Carter, 1976), sex-comparisons or investigations of the effect of sex are limited. For unmarried Wisconsin females, Carter (1972) found a zero-order correlation coefficient of .375 between friends' educational plans and the respondent's college plans, while for unmarried males, a larger correlation ($r = .457$) was observed.

In their analysis of the effect of sex on this process, Alexander and Eckland (1974) uncovered a "trivial" advantage of being female on peers' college plans, thus questioning any sex-specific advantage.

The third significant other variable, and one which is directly tied to the educational institution, is teachers' encouragement. As was the case with other encouragement measures, teachers' encouragement has been demonstrated to have a positive relationship with educational plans. This positive association has been found in all three studies which have addressed this relationship with emphasis on sex. Although unstandardized regression coefficients did not significantly favor either sex, Carter (1972) did find a somewhat stronger zero-order correlation between teachers' encouragement and college plans for unmarried Wisconsin females ($r = .414$) than for a similar sample of males ($r = .340$). Rehberg and Hotchkiss (1972), in concurrence with the previous findings, found similar moderately large correlations between the two variables; but after controlling for a number of related variables the correlations attenuated from .45 to .10 for males and from .43 to .08 for females. Although teachers' encouragement is no doubt important, especially in consideration of their role in education, perhaps their influence is not as important as that exerted by parents and peers. Sex, according to Alexander and Eckland (1972), exerts an inconsequential main effect on teachers' influence.

Also specifically related to the educational institution are guidance counselors, yet their influence on educational plans has been excluded in much of the previous research on significant other influence and differences relative to sex. It is interesting to note that the one major study (Rehberg and Hotchkiss, 1972) on the relationship between these two variables has pointed out quite sizeable zero-order correlations which did not reduce to triviality after controlling for a barrage of other related variables. Rehberg and Hotchkiss (1972) found zero-order correlations of .54 for females and .46 for males between the variables and fifth-order partial correlations of .23 and .17 respectively. For both males and females, the path coefficients to educational expectations from counselor's educational advice were approximately .25--the largest of the significant other variables.

Overall, in the literature, the significant other variables all exhibit a positive association with and influence on educational plans but at the same time do not inordinately favor either sex. Their utility in understanding the formation of educational plans as intervening or mediating variables is important and the implications of their effect on policy issues is substantial.

Marital and Fertility Plans and The Formation of Educational Plans

In this final review section, the focus is on the relationship between marital plans, fertility plans and their association with educational plans. Marital and fertility plans, as future concerns for the youth, may restrict or promote certain educational plans.

The literature on this relationship is scant, yet what is available suggests a differential association with respect to sex.

As for the formation of marital plans, Bayer (1969a; 1969b) found that socioeconomic status produced a moderate positive influence on desired age at marriage for both sexes. However, no specific research has been found concerning the formation of fertility plans. Bayer (1969a) found a zero-order correlation between marital and educational plans of .319 for females but only a .157 correlation for males. The positive association suggests that the more education a youth desires, the more likely he/she is willing to defer marriage until a later age or vice versa. This relationship appears especially significant for females in view of the larger coefficient. Subsequently, Bayer (1969b) reconfirmed this relationship by finding a .457 female correlation and a .289 male correlation. Another added contingency is fertility plans. No specific literature pertaining to fertility plans and educational plans relative to sex has been located so this aspect of the research is exploratory in nature.

Hypotheses

The previous review of literature can be summarized as hypotheses which are consistent with the theoretical framework presented in the previous chapter.

Hypothesis 1

Social origin will affect significant other influence of both white males and white females. This hypothesis is derived from the logic and findings presented by Sewell and Shah (1968a; 1968b), Carter (1972), Rehberg and Hotchkiss (1972) and Alexander and Eckland (1974). The influence exerted by the structural social origin variables on educational plans is hypothesized to be channeled through the intervening significant other variables.

Hypotheses 2

Social origin and significant other influence, in combination, will affect educational plans of both white males and females. The research which pertains to the formation of educational plans has overwhelmingly supported this hypothesized relationship (see Sewell & Shah, 1968a; Carter, 1972; Rehberg & Hotchkiss, 1972; Alexander & Edkland, 1974).

Hypothesis 3

Social origin and significant other influence, in combination, will affect both marital and fertility plans of white males and white females. This hypothesis is basically exploratory although Bayer (1969a; 1969b) provides some basis for this relationship.

Hypothesis 4

Marital and fertility plans will be related to educational plans for both white males and females. Again Bayer's (1969a, 1969b) findings suggest this association is operative. However, this hypothesis is also largely exploratory in nature.

Hypothesis 5

Sex will affect significant other influence, marital, fertility and educational plans. The research presented in this chapter suggests that sex may be important in accounting for the formation of educational plans. Alexander and Eckland (1974) have provided some support for this hypothesis. The numerous cross-sex comparisons that have been reviewed imply that sex is a significant variable in understanding the process of forming educational plans.

Summary

That portion of the literature which specifically deals with the relationship of sex to the formation of educational plans has been reviewed in this chapter. While some variation appears to exist between the sexes, no systematic variation was uncovered. From the theoretical framework and the literature review, five hypotheses were presented to spell out the relationships between the variables relative to sex. Methods and procedures to test the hypotheses are elaborated in the next chapter.

CHAPTER V

METHODS AND PROCEDURES

The aim in this chapter is to present the methods and specific procedures employed in addressing the issues pertinent to this study. The chapter is divided into three sections to address these concerns. The first section focuses on the nature of the sample. This is followed by sections devoted to the operational definitions of the variables and the analytical techniques utilized.

The Sample

Data being utilized in this study are taken from a larger investigation known as the Southern Youth Study.[13] Since the overall project is an extensive longitudinal study, the sampling procedures used in the present study are the result of earlier sampling guidelines. Overall, two waves of information have been collected in the study: the first in 1968 and a follow-up in 1972. Although exclusively 1972 data are utilized in this study, it is necessary to consider the original (1968) sampling framework to understand the sample selection.

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[13] The data are from Project 1231R of the Louisiana Agricultural Experiment Station and the United States Department of Agriculture CSRS Research Project S-81, "Development of Human Resource Potentials of Rural Youth in the South and Their Patterns of Mobility." While the total project encompasses six Southern states (Alabama, Georgia, Louisiana, Mississippi, South Carolina and Texas), the data being examined in this study are confined to Louisiana.

The goal of the research in 1968 was to obtain a representative sample of rural high school youth in Louisiana. A proportionate, stratified, random cluster sampling technique was employed. The procedures followed in selecting the sample were as follows: (1) the state was stratified by four geographical areas to represent the four quadrants of the state which differed somewhat in their social and economic characteristics. Moreover, each quadrant was relatively homogenous in its social and economic traits compared to the others; (2) clusters (or schools) served as the sampling unit. Within each quadrant, between four and six schools were selected randomly from nonmetropolitan parishes to obtain black and white students proportionate to their enrollment in nonmetropolitan schools within the state. A total of twenty schools--13 white and 7 black--were selected for the entire state; (3) senior students in the schools were designated as respondents to correspond with the cohort being studied in the other states participating in the project.

In 1972, data were to be collected from seniors in the same schools as in 1968. However, this could not be done in each instance because of certain changes in the schools, i.e., public school integration and the establishment of private academies. Overall, only four of the original 20 schools--three white and one black--were substantially the same as in 1968 and two had been closed. These four unchanged schools, the 14 other integrated ones still open, and two private academies were selected as the sampling units. In 1972, 798 students completed the questionnaires which were administered by researchers from the Department of Rural

Sociology, Louisiana State University. For the purposes of this study the data set was restricted to unmarried white high school seniors, as the addition of cross-racial categories would add a further confounding structural complexity to the issues already in question. Therefore, the sample size was 419--208 males and 211 females.

A modified 18-page version of the 1968 S-61 Southern Youth Study questionnaire was utilized in May, 1972 to collect data by means of group interviews. The instrument utilized is included as Appendix A.

Operationalization of the Variables

There are 13 variables which were considered in this research and certain groups of these were utilized as various measures of a particular conceptual area. Therefore, prior to any analysis, operational definitions are stated to insure that the conceptual areas were adequately reflected by the measures employed.

Social Origin Variables

The first three measures were conceptualized as social origin variables. In essence, social origin describes a youth's background characteristics which may have an impact on subsequent development. Measures of a youth's social origin included in this study were father's education, mother's education and the major family income-earner's occupation. Operationally, these are defined as follows:

Father's Education (A) - Determined by the respondent's indication of highest school grade completed by his father. Responses were one of the following nine options:

1. Did not go to school
2. Grade 1-7
3. Eighth grade
4. Some high school but didn't graduate
5. Graduated from high school
6. Went to vocational school after graduating from high school
7. Some college, but didn't graduate
8. College graduate (4 years)
9. Don't know

Mother's Education (B) - Operationalized in a manner identical to father's education.

Major Family Income-Earner's Occupation (C) - Determined by the response to the question - "What is the main job held by the major money earner of your home?" The specific occupations were coded according to the Duncan socioeconomic index (Duncan, 1961).

Significant Other Influence Variables

The second group of variables relate to socialization influences. Although it would be näive to even suggest that socialization is measured directly, nevertheless, the variables are analyzed as indirect measures. More appropriately, this set of measures refers to "perceived significant other encouragement to attend college" and close friends' college plans. Five measures are used and they are operationalized as follows:

Parental Encouragement (D) - Determined by a response to the following statement: "In general, have your parents:"

1. Strongly discouraged you from going to college.
2. Discouraged you from going to college.
3. Neither discouraged nor encouraged you about going to college.
4. Encouraged you to go to college.
5. Strongly encouraged you to go to college.

Teachers' Encouragement (E) - Operationalized in a manner identical to parental encouragement.

Guidance Counselor's Encouragement (F) - Operationalized in a manner identical to parental encouragement.

Friends' Encouragement (G) - Operationalized in a manner identical to parental encouragement.

Peer Modeling (H) - The last socialization measure refers to the "modeler-definer" distinction mentioned earlier (Kelly, 1952; Woelfel and Haller, 1971; Picou and Carter, 1976), and is operationalized as a response to the following statement: "Are most of your close friends:"

1. Going to college
0. Getting jobs, probably not going to college
0. Going into military service

The last two response categories are collapsed thus creating a dichotomous variable which will be employed as a "dummy variable" (cf. Blalock, 1972:498-502) for inclusion in the regression analysis.

Marital, Fertility and Educational Plans

The dependent variables in this research are classified into two groups. One of these is referred to as "career contingencies" and the other is educational plans. Due to the specification problem cited earlier, a temporal arrangement of the variables is problematic, yet their relationship with educational plans is theoretically salient. The two career contingencies to be examined are marital plans (desired age at marriage) and fertility plans (desired number of children). Operationally, these variables were defined as follows:

Marital plans (I) - Determined by an open response to the question: "At what age would you like to get married?" The actual age reported served as the code, however, the ages were collapsed for χ^2 analysis. The categories are:

18 or less
19
20
21
22
23
24
25
26 or older

Fertility plans (J) - Determined by an open response to the question: "How many children do you want?" The actual number of children reported served as the code, however, the numbers were collapsed for χ^2 analysis. The categories are:

0
1
2
3
4
5
6
7 or more

The other dependent variable and the primary focus of this study was educational plans and this refers to the amount of desired schooling the youth wishes to pursue.[14] Operationally, the variable is measured as follows:

Educational plans (K) - Coded as the response to the question "If you could have as much schooling as you desired, which of the following would you do?

1. Quit school right now.
2. Complete high school.
3. Complete a business, commercial, electronics, or some other technical program after finishing high school.
4. Graduate from a junior college (2 years).
5. Graduate from a college or university.
6. Complete additional studies after graduating from a college or university.

The final variables considered in this research are sex and race of the respondent and this information was obtained in the biographical section of the survey instrument.

As should be obvious, several of these measures are problematic. The variables which have been referred to as "socialization" are not direct measures, but rather are an individual's perception of encouragement to attend college and whether or not most of the respondent's friends are going to college. Nevertheless, all the measures employed have been utilized before and all hold an intuitive relationship with the conceptualizations they profess to measure.

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[14] The term "educational plans" is utilized because of the inclusiveness which the term suggests. The common distinction between aspirations and expectations (cf. Kuvlesky and Bealer, 1966) is avoided because, although the questions employed to address this distinction are available for educational and fertility projections, they are not included for marital projections. Thus, it is difficult to say whether the question pertaining to marital projections is exclusively an aspiration or an expectation, if in fact, there was a distinction in the mind of the respondent. Therefore, all three are referred to as "plans" because the broadness of the term avoids the problematic nature of the age at marriage projection.

Analytical Techniques

The hypotheses specified in previous discussion will be tested in several ways, but the major analytical technique will be path analysis. As mentioned in Chapter II, this technique provides a viable means to analyze temporally specified variables related in a causal sequence.

The Technique of Path Analysis. Path analysis (Duncan, 1966; Heise, 1969; Land, 1969) probably best exemplifies the recent trends in empirical social research. There are a number of advantages in using path analysis beyond the more conventional statistical procedures; however, the most important attribute is theoretical salience. By explicitly stating theoretical propositions in terms of structural equations, the researcher is able to tie theoretical and empirical considerations together. Thus, a path model is a set of structural equations which are linked together to represent a theoretical model. By no means does path analysis prove causation; however, it does enable a researcher to ascertain the relative influence of various independent variables on a particular dependent variable. Statistically speaking, this influence is determined by the amount of change in a dependent variable for each unit change in an independent variable. Beta weights (or slope estimates) are used to indicate this change. By standardizing these weights, path coefficients are obtained which enable the relative influence of several independent variables on a particular dependent variable to be determined. But to maximize the technique's validity a number of assumptions must be met. Heise (1969) has reviewed the necessary assumptions which pertain to a linear, recursive path model and summarizes them as follows:

1. In the system of interest, change in one variable must always occur as a linear function of changes in other variables (Heise, 1969:44).

2. The system of concern must not contain any reciprocal causations or feedback loops; that is, if X causes Y, Y cannot affect X either directly or through a chain of other variables (Heise, 1969:45).

3. The causal laws governing the system must be established sufficiently to specify the causal priorities among variables, in a way that is UNDEBATABLE (Heise's emphasis) (Heise, 1969:52).

4. The disturbances of dependent variables must be uncorrelated with each other or with the inputs, thus it is necessary that ALL (Heise's emphasis) system inputs are entered explicitly into analysis (Heise, 1969:56).

5. The usual methodological assumptions involved in multivariate regression analysis must be met. These are: interval or ratio measurement; independent sample units; homoscedasticity (i.e., variance must be similar among cases of the system variables); the sources of variation for each variable in the system must be sufficiently diverse so that the correlations between the variables are not extremely large in absolute magnitude (multicollinearity) and of course, reliable measureme[illegible] (Heise, 1969:57).

Despite these restrictions, regression is a relatively robust statistical technique and slight violations should not overly jeopardize the research (see Labovitz, 1967; Heise, 1969; Land, 1969, Bohrnstedt and Carter, 1971).

The structural equations which comprise the path model depicted in Figure 7 are:[15]

(1) $D = p_{DA}A + p_{DB}B + p_{DC}C + p_{Dw}ew$

(2) $E = p_{EA}A = p_{EB}B + p_{EC}C + p_{Ev}ev$

(3) $F = p_{FA}A + p_{FB}B + p_{FC}C + p_{Fu}eu$

(4) $G = p_{GA}A + p_{GB}B + p_{GC}C + p_{Gt}et$

(5) $H = p_{HA}A + p_{HB}B + p_{HC}C + p_{Hs}es$

(6) $I = p_{IA}A + p_{IB}B + p_{IC}C + p_{ID}D + p_{IE}E + p_{IF}F + p_{IG}G +$
$p_{IH}H + p_{Iz}ez$

(7) $J = p_{JA}A + p_{JB}B + p_{JC}C + p_{JD}D + p_{JE}E + p_{JF}F + p_{JG}G +$
$p_{JH}H + p_{Jy}ey$

(8) $K = p_{KA}A + p_{KB}B + p_{KC}C + p_{KD}D + p_{KE}E + p_{KF}F + p_{KG}G +$
$p_{KH}H + p_{Kx}ex$

Given the fact that there are 13 over-identifying restrictions, correlations must be posited among the error terms. Therefore, e_s, e_t, e_u, e_v and e_w are all intercorrelated as well as e_x, e_y and e_z.

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[15] The term p_{YX} is the effect of variable X on variable Y. For path analysis "p" is utilized instead of "b" (beta) yet both refer to standardized regression coefficients. Sex (S) is not included in these equations.

From these equations, path coefficients (standardized partial regression coefficients)[16] will be obtained to determine the amount of change in the dependent variable for each standardized unit change in the independent variable.

To ascertain the relationship between marital, fertility and educational plans, first-order partial correlation coefficients will be employed. A partial correlation yields a single measure summarizing the degree of relationship between two variables, controlling for a third (Blalock, 1972:435-437).[17] Also, multiple correlation coefficients will be obtained to ascertain the relationship between educational plans and marital and fertility plans taken together (Blalock, 1972:454-458).[18]

Techniques for Assessing the Effect of Sex. One of the purposes of this study was to examine the effect of sex on educational plans

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[16] The "path coefficient" is a standardized partial regression coefficient and is derived from the formula $p_{YX} = b_{YX} (s_Y/s_X)$ where p_{YX} = the path coefficient; b_{YX} = unstandardized regression coefficient; s_X = standard deviation of the independent variable X; s_Y = standard deviation of the dependent variable Y.

[17] The formula for the first-order partial correlation is:

$$r_{IJ.K} = r_{IJ} - \frac{(r_{IK})\ (r_{JK})}{\sqrt{1-r_{IK}^2}\ \sqrt{1-r_{JK}^2}}$$

[18] The formula for the multiple correlation is:

$$r_{I.JK} = \sqrt{r^2_{IJ} + r^2_{IK.J}\ (1-r^2_{IJ})}$$

and to investigate the processes (if any) through which male and female youth differentially formulate these plans.

Chi-square tests (χ^2) will be utilized to compare frequencies between the sexes. The chi-square test is an appropriate test that can be used whenever a researcher wishes to evaluate whether or not frequencies which have been empirically obtained differ significantly from those which would have been expected if there was no hypothesized difference (Blalock, 1972:275-287).

The difficult comparison is between the male and female path models. For comparing effects between samples, path coefficients (standardized regression coefficients) may be misleading because differences between standardized coefficients are confounded by differences in the variances of the variables being considered (Schoenberg, 1972:30). In other words, path coefficients can be used only to compare the effects of independent variables on a single set of data (Schoenberg, 1972:4-5).

However, by including sex as an exogenous "dummy variable" in the appropriate structural equations, a slope estimate can be obtained and the direct and indirect consequence of being male or female on a particular dependent variable can be ascertained and adequately compared against the other independent variables (see Blalock, 1972; Alexander and Eckland, 1974). For the equations males were coded the arbitrary value of 1 and females the arbitrary value of 0.

In sum, the hypotheses presented in the previous chapter will be tested using Louisiana data from the Southern Youth Study. To evaluate the theoretical model, path analytic techniques will be used. The results of the analysis are presented in the next two chapters.

CHAPTER VI

ANALYSIS AND INTERPRETATION--PART I

The purpose of the next two chapters is to analyze the data in light of the hypotheses presented in previous discussion. This first analysis chapter is divided into two sections, the first restricted to a male sample and the second, to a female sample. The applicability of the proposed model for each sex is ascertained. The first four hypotheses presented at the end of Chapter IV are tested for both males and for females. A summary of the findings is provided at the end of the chapter.

Analysis of the Model of the Formation of Educational Plans for Males

In this section, the hypothesized relationships, as specified in the fourth chapter, are tested for males. Thus, the section is divided into four parts, each directed at a specific hypothesis.

Social Origin and Significant Other Influence

It will be recalled that the first hypothesis stated that the social origin variables will influence or affect the significant other variables. By examining the zero-order correlation coefficients presented in Table 3, the linear association between these two sets of variables can be determined, thus providing one basis for evaluating the causal paths. Overall, of the 15 specific relationships, 14 were positive. This finding suggests that the ble 3. Zero-Order Correlations, Means and Standard Deviations of Variables in a Recursive Model of the Formation of Educational Plans: Males (N=143).

ri- les^a	A	B	C	D	E	F	G	H	I	J	K
	--										
	.513***	--									
	.386***	.331***	--								
	.222**	.178*	.107	--							
	-.092	.028	.022	.342***	--						
	.113	.146	.001	.469***	.522***	--					
	.190*	.227	.220**	.453***	.433***	.372***	--				
	.368***	.359***	.152	.213***	.232**	.332***	.350***	--			
	-.018	.064	.011	-.184*	-.168*	-.021	-.159	.006	--		
	-.024	-.164*	-.129	-.020	-.047	-.054	-.139	-.086	-.287***	--	
	.309***	.307***	.190*	.451***	.244**	.357***	.440***	.368***	-.154	-.012	--
n	4.517	5.132	36.084	3.986	4.049	4.049	3.671	.601	23.042	2.850	4.259
nd- ia- n	1.891	1.620	23.008	.888	.790	.899	.829	.491	3.146	1.302	1.433

e variables are: A = father's education, B = mother's education, C = income earner's occupation, perceived parental encouragement, E = perceived teachers' encouragement, F = perceived guidance nselor's encouragement, G = perceived friends' encouragement, H = close friends' college plans, marital plans, J = fertility plans, K = educational plans. ***p ≤ .001; **.001 < p ≤ .01; 1 < p ≤ .05.

variable sets are related in a unidirectional pattern, i.e., as social origin increases, significant other influence increases. But for the most part, the associations were rather weak.

Turning directly to the regression analysis, the same weak relationships were observed (see Table 4). The coefficient of determination (R^2) indicates the amount of variance in the dependent variable accounted for or "explained" by the various predictor variables in the structural equation. The three social origin measures, together, accounted for only 5.5% of the variance in perceived parental encouragement to attend college. None of the three social origin measures had a statistically significant influence[19] on the dependent variable. However, of the three, father's education produced the largest effect ($p = .175$) on perceived parental encouragement. The row labeled residual in Table 4, indicates the effect on the dependent variable of all unmeasured factors. The residual influence on parental encouragement, for example, was .972.

Slightly less than 2% of the variance in the next significant other variable--perceived teachers' encouragement--was accounted for by the three origin measures. None of the three predictors had a statistically significant influence on the dependent variable and father's education exerted a negative influence. This last ble 4. Standard Regression Coefficients, Coefficients of Determination and Residuals for a Recursive Model of the Formation of Educational Plans: Males (N=143)

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[19] Statistical significance was determined by testing the null hypothesis for the unstandardized regression coefficient. Statistical significance means that the probability of accepting the null hypothesis was less than or equal to .05.

edetermined riables[a]	Dependent Variables[a]							
	D	E	F	G	H	I	J	K
	.175	-.161	.073	.056	.256**	-.088	.203	.091
	.084	.093	.131	.148	.236**	.110	-.192	.096
	.012	.054	-.071	-.150	-.025	.045	-.117	.032
						-.170	.046	.246**
						-.176	.043	-.006
						.167	-.035	.100
						-.104	-.121	.198*
						.050	-.039	.141
	.055	.019	.027	.077	.175	.083	.070	.348
idual	.972	.990	.986	.961	.908	.958	.964	.807

e variables are: A = father's education; B = mother's education, C = income-earner's occupa-
n, D = perceived parental encouragement, E = perceived teachers' encouragement, F = perceived
dance counselor's encouragement, G = perceived friends' encouragement, H = close friends'
lege plans, I = marital plans, J = fertility plans, K = educational plans.
$p \le .001$; ** $.001 < p \le .01$; * $.01 < p \le .05$.

finding is particularly difficult to interpret and runs counter to what was expected.

In a similar fashion to perceived teachers' encouragement, the three social origin variables, together, accounted for only about 3% of the variation in perceived guidance counselor's encouragement, and one of the variables--income-earner's occupation--demonstrated an inverse effect.

The trio of social origin measures did little better in predicting perceived friends' encouragement to attend college. The independent variables accounted for only approximately 8% of the variation in friends' encouragement. The path coefficient from income-earner's occupation to the dependent variable showed a noteworthy influence ($p = -.150$); however none of the path coefficients were statistically significant.

The three social origin variables accounted for 17.5% of the variance in close friends' college plans which was considerably more than for any of the encouragement variables. Two of the three hypothesized paths to close friends' college plans were highly significant which suggests the possibility of this alternative socialization mode being influenced by social origin information. Father's education had the largest effect, ($p = .256$), yet it only slightly overshadowed the influence of mother's education ($p = .236$) on the modeling variable.

In sum, the first hypothesis was only partially supported[20] for the male sample. Although the majority of the path coefficients were positive, the majority were also rather small and not statistically significant. In light of the theoretical framework and the bulk of previous research, these findings were unanticipated as they indicate that perhaps social origin only minimally influences the various significant other measures for males.

Social Origin, Significant Other Influence and Educational Plans

The second hypothesis asserted that social origin and significant other influence, together, will affect educational plans. All the variables in both conceptual sets were positively associated with educational plans (see Table 3). This finding, again, shows a directional pattern. Furthermore, the zero-order correlations were considerably larger than those reported for the previous hypothesis. This was especially true for the correlations between the significant other variables and educational plans.

Turning to the regression analysis, 35% of the variation in educational plans was accounted for by all the social origin and significant other influence variables in the structural equation. For the most part, the various measures did an adequate job of predicting educational plans. As was the case for predicting the significant other variables, none of the social origin measures exerted a direct effect worthy of note. The best predictor of the dependent variable was perceived parental encouragement (p = .246), followed by perceived friends' encouragement (p = .198) and close friends' college plans (p = .141). This finding was consistent with that of most of the previous research (e.g. Carter, 1972; Rehberg and Hotchkiss, 1972; Picou and Carter, 1976). The two remaining variables--teachers' and counselor's educational encouragement--surprisingly, did not significantly influence the educational plans of males.

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[20] There were several criteria utilized to evaluate an overall hypothesis relative to its acceptance or rejection. Direction of influence, statistical significance of path coefficients and magnitude of the coefficient of determination were all considered. Being that there were several more specific (sub)hypotheses underlying the more general hypothesis, it was possible to "partially" accept the overall hypothesis.

According to the systems framework, the significant other measures should channel or mediate the informational flow provided by a youth's social origin. Looking at Table 5, the reduced form regression coefficients overwhelmingly supported such an assertion. The reduced form coefficients were obtained by estimating the equation for a dependent variable by first, including the three exogenous social origin variables, then adding the intervening set of significant other variables. The total effect of a specific origin variable on the dependent variable is the path coefficient of the variable the first time it is entered into the equation. Thus, as shown in Table 5, where father's education had a total effect of .190 on educational plans, which was statistically significant, the influence attenuated to an insignificant .091 with the inclusion of the various significant other measures. In other words, more than half of the total influence of father's educational level on the educational plans of his offspring was via the significant le 5. Reduced Form Regression Coefficients in Standard Form for a Recursive Model of the Formation of Educational Plans: Males (N=143)

endent iables^a	Predetermined Variables^a								
	A	B	C	D	E	F	G	H	R^2
	.175	.084	.012						.055
	-.161	.093	.054						.019
	.073	.131	-.071						.027
	.056	.148	.150						.077
	.256**	.236**	-.025						.175
	-.070	.098	.005						.008
	-.088	.110	.045	-.170	-.176	.167	-.104	.050	.083
	.185	-.216*	-.129						.056
	.203	-.192	-.117	.046	.043	-.035	-.121	-.039	.070
	.190*	.192*	.053						.128
	.091	.096	.032	.246**	-.006	.100	.198*	.141	.348

e variables are: A = father's education, B = mother's education, C = income-earner's occupation, perceived parental encouragement, E = perceived teachers' encouragement, F = perceived guidance nselor's encouragement, G = perceived friends' encouragement, H = close friends' college plans, marital plans, J = fertility plans, K = educational plans.

$p \leq .001$; ** $.001 < p \leq .01$; * $.01 < p \leq .05$.

other influence variables. This same reduction pattern was also present in the effect of mother's education on the dependent variable. The remaining origin variable--income-earner's occupational level--although not statistically significant, also attenuated in a similar fashion. Thus, these findings supported the theoretical contention of the mediating role of the significant other variables.

Social Origin, Significant Other Influence and Marital and Fertility Plans

The third hypothesis, it will be recalled, posited that the social origin and significant other measures will affect marital and fertility plans. For the males, inconsistent findings were observed. Most of the zero-order correlations were weak and inverse for both of these dependent variables (see Table 3). The average projected age at marriage for males was 23 and the average desired number of children was 2.85.

Only slightly more than 8% of the variance in marital plans was explained by the eight predictor variables. Turning to the path coefficients, the largest (albeit not statistically significant) influence on marital plans was produced by perceived teachers' encouragement to attend college ($p = -.176$), followed closely by perceived parental encouragement ($p = -.170$). These inverse relationships suggest that the more parental and teachers' encouragement to attend college a youth receives, the younger will be his desired age at marriage. The remaining six variables all exhibited relatively small effects on the dependent variable.

Inconsistent relationship that were not statistically significant also characterized the influence of the predictor variables on fertility plans. Taken together, the variables accounted for only 7% of the variance in the dependent variable and none of the eight hypothesized paths were statistically significant. However, it must be recalled that the significant other variables were operationalized so that they were directed specifically at education and thus any influence on marital and fertility plans was necessarily indirect.

Marital Plans, Fertility Plans and Educational Plans

The last of the four hypotheses posited that both marital and fertility plans will be associated with educational plans. As shown in Table 6, the zero-order correlation between education and marital plans was inverse ($r_{KI} = -.154$) implying that as educational plans increased, i.e. moves towards higher levels of education, desired age at marriage decreased. After controlling for fertility plans, a similar inverse relationship was observed that was statistically significant ($r_{KI.J} = -.164$). The next two correlation coefficients in Table 6, suggested a similar, but considerably weaker, relationship than that observed between educational and marital plans. The zero-order correlation between fertility plans and educational plans was - .012 connoting virtually no association between the two variables. After controlling for marital plans, the relationship still remained trivial.

The final test of this hypothesis was the multiple correlation between educational plans on the one hand, and fertility and marital

Table 6. Zero-Order, First-Order Partial and Multiple Correlations Between Marital Plans, Fertility Plans and Educational Plans by Sex of the Respondent

	Males	Females	Total
r_{KI}	-.154	$.367^{***}$	.093
$r_{KI.J}$	$-.164^{*}$	$.369^{***}$	.091
r_{KJ}	-.012	-.026	-.024
$r_{KJ.I}$	-.059	-.046	-.011
$r_{K.JI}$	$.164^{*}$	$.359^{***}$	.095

The variables are: K = educational plans, I = marital plans, J = fertility plans.

*** $p \leq .001$

** $.001 < p \leq .01$

* $.01 < p \leq .05$

plans taken together, on the other. As shown in Table 6, this coefficient was statistically significant ($r_{K.JI} = .164$) which suggests that there was a strong relationship between the two sets of variables; however, it should be pointed out that the significance of the coefficient resided largely with the strong observed relationship between marital and educational plans.

Again, this hypothesis was only partially supported; however, full support was given to that part which asserted an association between desired age at marriage and educational plans.

To summarize the findings; first, the social origin measures exerted a small positive influence on both the significant other variables and educational plans. Next, the significant other variables, with the possible exception of teachers' encouragement, did a fairly adequate job of both mediating the effect of the social origin measures and predicting educational plans. By and large, neither the social origin measures nor the significant other variables accounted for the formation of marital and fertility plans; nevertheless, at least marital plans seemed to be intimately associated with the formation of educational plans. These findings lend partial support to the systems framework employed as well as to the applicability of the theoretical model to rural white males. Finally, the correlations among the residual effects (see Table 7) did not overly suggest any spurious correlation operative in this process (Heise, 1969:56-57).

ble 7. Correlated Residual Effects for a Recursive Model of the Formation of Educational Plans: Males (N=143)

riables^a	D	E	F	G	H	I	J	K
	--							
	.371***	--						
	.410***	.576***	--					
	.423***	.443***	.378***	--				
	.112	.271***	.313***	.243***	--			
	-.000	.000	.000	-.000	-.000	--		
	.031	-.112	-.091	-.074	-.077	.123	--	
	.038	.043	.022	.016	-.035	-.111	.089	--

he variables are D = perceived parental encouragement, E = perceived teachers' encouragement, = perceived guidance counselors' encouragement, G = perceived friends' encouragement, H = ose friends' college plans, I = marital plans, J = fertility plans, K = educational plans.

** $p \leq .001$; ** $.001 < p \leq .01$; * $.01 < p \leq .05$

Analysis of the Model of the Formation of Educational Plans for Females

Turning attention away from males and focusing exclusively on females, the same model of educational plans that was tested in the previous section for males, can also be tested for females. Therefore, in this section, like the previous one, the same four hypotheses which were derived from the theoretical model are tested.

Social Origin and Significant Other Influence

The first hypothesis stated that the trio of social origin variables will affect the five significant other measures. Looking at the associational measures presented in Table 8, positive relationships were observed in all but one of the cases. This directional pattern was basically analogous to that found in analyzing the male sample. Further, the magnitude of the correlation was similar to that observed for males. The implication of this finding is that the higher the youth's social origin, the stronger will be significant others' encouragement to attend college and the more likely she will be to have close friends planning to attend college. Of the five significant other variables, perceived parental encouragement and close friends' college plans demonstrated the strongest association with the social origin variables, and perceived guidance counselor's encouragement showed the weakest.

Examining the coefficients of determination and the path coefficients in Table 9, it becomes apparent that the three e 8. Zero-Order Correlations, Means and Standard Deviations of Variables in a Recursive Model of the Formation of Educational Plans: Females (N=158)

ables[a]	A	B	C	D	E	F	G	H	I	J	K
	--										
	.520***	--									
	.367***	.321***	--								
	.325***	.253***	.252***	--							
	.217**	.130	.100	.262***	--						
	.-17	-.002	.073	.362***	.477***	--					
	.087	.095	.174*	.109	.324***	.330***	--				
	.261***	.250***	.199**	.255***	.256***	.277***	.332***	--			
	.119	.025	-.005	.020	.058	.158*	.210**	.157*	--		
	-.024	.096	.031	.010	-.027	-.027	.079	-.016	.046	—	
	.254***	.173*	.243***	.343***	.356***	.356***	.340***	.373***	.367***	-.026	--
	4.696	5.127	39.051	3.810	3.924	3.867	3.532	.570	20.525	3.260	4.171
ation	1.934	1.571	21.139	.911	.794	.830	.702	.497	2.668	1.855	1.327

variables are: A = father's education, B = mother's education, C = income-earner's occupation, perceived parental encouragement, E = perceived teachers' encouragement, F = perceived guidance selor's encouragement, G = perceived friends' encouragement, H = close friends' college plans, marital plans, J = fertility plans, K = education plans. *** .001 ≤ p; ** .001 < P ≤ .01; 1 < p < .05

le 9. Standardized Regression Coefficients, Coefficients of Determination and Residuals for a Recursive Model of the Formation of Educational Plans: Females (N=158).

determined iables^a	Dependent Variables^a							
	D	E	F	G	H	I	J	K
	.227**	.199*	.149	.008	.152	.157	-.084	.064
	.090	.020	-.095	.039	.139	-.041	.146	-.012
	.140	.020	.048	.159	.098	-.082	.009	.097
						-.065	.029	.157*
						-.087	-.119	.175*
						.127	.002	.102
						.179*	.123	.152*
						.087	-.051	.177*
	.132	.048	.021	.032	.094	.083	.037	.312
idual	.932	.975	.989	.984	.952	.958	.981	.829

e variables are: A = father's education, B = mother's education, C = income-earner's occupation, perceived parental encouragement, E = perceived teachers' encouragement, F = perceived guidance nselor's encouragement, G = perceived friends' encouragement, H = close friends' college plans, marital plans, J = fertility plans, K = educational plans. ***p ≤ .001; **.001 < p ≤ .01; 1 < p ≤ .05.

exogenous measures, especially mother's education and income-earner's occupation, did not significantly influence any of the significant other variables. The three social origin measures, taken together, accounted for approximately 13% of the variation in perceived parental encouragement, with a statistically significant influence exerted by father's education ($p = .227$). Parental encouragement to attend college was also affected (although not significantly) by the family income-earner's occupational level ($p = .140$) and mother's education ($p = .090$).

Turning to the next encouragement variable, the small coefficient of determination (.048) suggests that the three social origin variables had little effect on perceived teachers' encouragement to attend college. Father's education had the only statistically significant influence ($p = .199$), as both mother's education and income-earner's occupational level produced only trivial influences on the dependent variable.

Taken together, the three antecedent variables explained only 2% of the variation in guidance counselor's encouragement as none of the three predictors demonstrated a statistically meaningful influence on the dependent variable. Again, the largest influence was exerted by father's education and, surprisingly, mother's education was found to have an inverse relationship ($p = -.095$) with the dependent variable.

Only slightly more than 3% of the variation in perceived friends' encouragement was accounted for by including the three origin variables in the structural equation. The largest effect on perceived friends' encouragement to attend college was produced by income-earner's occupation ($p = .159$). The path coefficients from the remaining two social origin variables were both small.

Consistent with the findings for the encouragement variables, the modeling variable--close friends' college plans--was not adequately predicted by the social origin variables. The coefficient of determination was .094, indicating that less than one-tenth of the variance in the dependent variable was accounted for by the exogenous variables. The largest, albeit not significant, influence was produced by father's education ($p = .152$) followed closely by mother's education ($p = .139$) and income-earner's occupational level ($p = .098$).

As was the case with the male sample, the first hypothesis was only partially supported. The consistent positive relationships that were observed concur with both the previous research and the theoretical framework; however, the weakness of the relationships prohibited full support of the hypothesis. Father's education appeared to be the best predictor of the significant other variables and mother's education seemed to be the least important.

Social Origin, Significant Other Influence and Educational Plans

The next hypothesis, it will be recalled, posited that the social origin and the significant other variables, together, will affect educational plans. As in the male sample, all of the variables, in both sets, were positively associated with educational plans. Not only were the zero-order correlations positive, they were also rather sizeable ranging from .173 to .381.

In total, the eight predictor variables explained approximately one-third of the variance in educational plans. The path coefficients, with one exception, were all positive and four out of the five significant other measures had a statistically significant influence on educational plans (see Table 9). The strongest impact was exerted by close friends' college plans (p = .177), followed by teachers' encouragement (p = .175), parental encouragement (p = .157) and friends' encouragement (p = .152). These coefficients emhpasize the important role that perceived encouragement plays on females' educational plans.

The reduced form coefficients presented in Table 10, followed the basic pattern outlined in the analysis of the male sample. Again, the significant other variables, as predicted in the theoretical framework, mediated the total effect of the social origin variables on educational plans. Almost two-thirds of the total effect of father's education on the dependent variable was channeled through the significant other measures and a little over 40% of the total influence of mother's education was likewise mediated. The total effect of the remaining exogenous variable--income-earner's occupational level--also attenuated with the inclusion of the significant other variables in the regression equation. Once again, the mediating role of the significant other variables was shown to be important, thus adding further support to the theoretical framework.

e 10. Reduced Form Regression Coefficients in Standard Form for a Recursive Model of the Formation of Educational Plans: Females (N=158)

ndent ables^a	Predetermined Variables^a								
	A	B	C	D	E	F	G	H	R^2
	.227**	.090	.140						.132
	.199*	.020	.020						.048
	.149	-.095	.048						.021
	.008	.039	.159						.032
	.152	.139	.098						.094
	.159	-.041	-.050						.018
	.157	-.041	-.082	-.065	-.087	.127	.179*	.087	.083
	.108	.144	.025						.017
	-.084	.146	.009	.029	-.119	.002	.123	.051	.037
	.178	.026	.169*						.091
	.064	-.012	.097	.157*	.175*	.102	.152*	.177*	.312

variables are: A = father's education, B = mother's education, C = income-earner's occupation, perceived parental encouragement, E = perceived teachers' encouragement, F = perceived guidance selor's encouragement, G = perceived friends' encouragement, H = close friends' college plans, marital plans, J = fertility plans, K = educational plans. *** $p \leq .001$; ** $.001 < p \leq .01$; 1 $< p \leq .05$

Social Origin, Significant Other Influence and Marital and Fertility Plans

The third hypothesis predicted a similar process operative in the formation of marital and fertility plans--i.e., the social origin and significant other variables will affect both marital and fertility plans. As was the case for males, the findings were somewhat unclear. All but one of the zero-order correlations between the eight predictor variables and marital plans were positive, while only half the correlations between the same predictor variables and fertility plans were similarly directed. The mean desired age at marriage for the female sample was 20.5 which was 2.5 years earlier than the mean desired age for males. Moreover, while the females, on the average, desired 3.3 children, the males desired only 2.9.

A little over 8% of the variance in marital plans was accounted for by the social origin and significant other influence variables. Only one variable--perceived friends' encouragement to attend college--had a statistically significant effect ($p = .179$) on a girl's desired age at marriage. None of the remaining seven variables produced a meaningful influence on the dependent variable. Furthermore, as shown in Table 10, the intervening significant other variables did not mediate the total effects of the social origin variables on marital plans.

The coefficient of determination for fertility plans was only .037 and none of the eight predictor variables in the model produced a significant influence on the dependent variable. Therefore, the third hypothesis was rejected; however, it must be recalled that the variables utilized were not adequately conceptualized for predicting these two variables and this hypothesis was largely exploratory because of this limitation.

Marital Plans, Fertility Plans and Educational Plans

The final hypothesis asserted that both marital and fertility plans will be associated with educational plans. The test results for this hypothesis are presented in Table 6. Both the zero-order correlation (r_{KI}= .367) and the first-order partial correlation ($r_{KI.J}$= .369) between desired age at marriage and educational plans were highly significant. While for males an inverse relationship was observed, for females, a strong positive association between the two variables was found. For females, as educational plans increased, their projected age at marriage likewise increased, yet the direct opposite pattern was observed for males.

A slight inverse relationship was found between fertility plans and educational plans for both the zero-order correlation (r_{KJ}= -.026) and the first-order partial correlation ($r_{KJ.I}$= -.046).

The multiple correlation between educational plans and marital and fertility plans was also highly significant ($r_{K.JI}$= .359), no doubt, gaining most of its strength from the large association between marital and educational plans.

That part of the final hypothesis which was related to marital plans was overwhelmingly supported while that part which was concerned with fertility plans was rejected. Finally, the lack of significant correlations among the residuals suggests that a spurious correlation was not present (see Table 11).

Overall, the findings for the female model seemed very similar to the results for the male model. Several very obvious differences did exist and will be explored in greater detail in the next chapter. However, the proposed model appeared to adequately account for the formation of educational plans for both sexes. Despite the fact that the formation of marital and fertility plans was not supported with the variables utilized, the statistically significant associations found between marital and educational plans for both samples suggest the importance of marital plans in the formation of educational plans. If a youth desires a particular educational goal, it may have consequences for his/her desired age at marriage and vice versa. The opposite findings between these two variables with respect to sex suggests that sex may have predictive utility in accounting for the formation of educational plans. This is pursued in the next chapter.

le 11. Correlated Residual Effects for a Recursive Model of the Formation of Educational Plans: Females (N=158)

iables^a	D	E	F	G	H	I	J	K
	--							
	.199*	--						
	.343***	.461***	--					
	.060	.312***	.309***	--				
	.170*	.198*	.246***	.306***	--			
	-.000	-.000	-.000	.000	.000	--		
	.001	-.001	.005	.000	.001	-.341***	--	
	.003	-.005	-.016	.012	.012	.274***	.095	--

he variables are residual effects for D = perceived parental encouragement, E = perceived achers' encouragement, F = perceived guidance counselor's encouragement, G = perceived friends' couragement, H = close friends' college plans, I = marital plans, J = fertility plans, = educational plans. *** $p \le .001$; ** $.001 < p \le .01$; * $.01 < p \le .05$

CHAPTER VII

ANALYSIS AND INTERPRETATION--PART II

This chapter reports on the effect of sex on the formation of educational plans. To pursue the significance that sex of the respondent has on the formulation of such plans, this chapter is divided into two sections. In the first section, the dependent variables are cross-tabulated by sex of the respondent and chi-square statistics are computed, thus testing for a significant difference between the sexes. Following the logic of the theoretical framework, in the second section, sex is included as a categorical "dummy" variable in the regression equations. By testing the theoretical model for the total sample, the effect of sex can be ascertained and the various path coefficients can be compared for any particular dependent variable. It will be recalled that the last hypothesis, presented at the end of Chapter IV, stated that sex of the respondent will affect significant other influence, marital plans, fertility plans and educational plans.

Comparisons of Distributions of the Dependent Variables in the Model of the Formation of Educational Plans

In this study, there were five variables which relate to significant others. The first of these is perceived parental encouragement to attend college (see Table 12) and when compared between the sexes, a statistically significant difference was not found; however, certain differences were present. Looking at the frequency distributions, it is readily observable that for both males and females, very little "discouragement" from parents was perceived. Males had a higher

Table 12. Perceived Parental Encouragement to Attend College by Sex of the Respondent: Percentages and Frequencies (in parentheses)

Perceived Parental Encouragement	Males	Females	Total
Strongly discouraged[a]	0.5(1)	0.9(2)	0.7(3)
Discouraged[a]	1.9(4)	3.3(7)	2.6(11)
Neither discouraged nor encouraged	27.4(57)	38.4(81)	32.9(138)
Encouraged	32.7(68)	30.8(65)	31.7(133)
Strongly encouraged	37.5(78)	26.5(56)	32.0(134)
Total	100.0	99.9	99.9
N =	(208)	(211)	(419)

$\chi^2 = 8.975$; 3 d.f.; $p \leq .089$

---

[a] Categories combined for χ^2.

percentage of respondents in the "encouraged" and "strongly encouraged" categories than did females. Furthermore, fewer males (percentage-wise) selected the "neutral" category relative to parental encouragement to attend college. Overall, males perceived more parental encouragement than did females.

The second significant other variable was perceived teachers' encouragement. Like parental encouragement, the chi-square statistic did not indicate a significant difference between the sexes; in fact, very similar percentages were found (see Table 13). As was the case with the parental encouragement measure, teachers' encouragement was highly unlikely to be perceived as discouraging. Only three out of 419 total respondents indicated that they had perceived their teachers as "discouraging" or "strongly discouraging" them from attending college.

There was no statistically significant difference between the sexes regarding perceived guidance counselor's encouragement. Again very few respondents indicated discouraging advice and as was the case with parental encouragement, roughly one-third of the respondents for both sexes fell in each of the remaining three categories (see Table 14). Over 60% of the rural youth sampled indicated that counselors had "encouraged" or "strongly encouraged" them to attend college. This closely parallels the finding for perceived parental and perceived teachers' encouragement.

Although not statistically significant, the distribution of perceived friends' encouragement showed certain marked differences between the sexes (see Table 15). Again, the "discouraged" and

Table 13. Perceived Teachers' Encouragement to Attend College by Sex of the Respondent: Percentages and Frequencies (in parentheses)

Perceived Teachers' Encouragement	Males	Females	Total
Strongly discouraged[a]	0.5(1)	0.0(0)	0.2(1)
Discouraged[a]	0.5(1)	0.5(1)	0.5(2)
Neither discouraged nor encouraged	31.2(65)	34.6(73)	32.9(138)
Encouraged	39.4(82)	38.9(82)	39.1(164)
Strongly encouraged	28.4(59)	26.1(55)	27.2(114)
Total	100.0	100.1	99.9
N =	(208)	(211)	(419)

$\chi^2 = .916$; 3 d.f.; $p \leq .823$

[a] Categories combined for χ^2.

Table 14. Perceived Guidance Counselor's Encouragement to Attend College by Sex of the Respondent: Percentages and Frequencies (in parentheses)

Perceived Guidance Counselor's Encouragement	Males	Females	Total
Strongly discouraged[a]	1.0(2)	0.0(0)	0.5(2)
Discouraged[a]	1.0(2)	1.9(4)	1.4(6)
Neither discouraged nor encouraged	34.1(71)	38.4(81)	36.3(152)
Encouraged	29.3(61)	29.9(63)	29.6(124)
Strongly encouraged	34.6(72)	29.9(63)	32.2(135)
Total	100.0	100.1	100.0
N =	(208)	(211)	(419)

χ^2=1.269; 3 d.f.; $p \leq .740$

[a] Categories combined for χ^2.

Table 15. Perceived Friends' Encouragement to Attend College by Sex of the Respondent: Percentages and Frequencies (in parentheses)

Perceived Friends' Encouragement	Males	Females	Total
Strongly discouraged[a]	1.0(2)	1.4(3)	1.2(5)
Discouraged[a]	2.9(6)	0.9(2)	1.9(8)
Neither discouraged nor encouraged	39.9(83)	49.8(105)	44.9(188)
Encouraged	41.3(86)	37.9(80)	39.6(166)
Strongly encouraged	14.9(31)	10.0(21)	12.4(52)
Total	100.0	100.0	100.0
N =	(208)	(211)	(419)

χ^2=5.386; 3 d.f.; $p \leq .144$

---

[a] Categories combined for χ^2.

"strongly discouraged" categories contained very few respondents, but the "strongly encouraged" category also contained fewer respondents (percentage-wise) than was observed for the other encouragement variables. Forty percent of the males and 50% of the females indicated that their friends had neither discouraged nor encouraged them to attend college.

In sum, there was not a significant difference found between the sexes for any of the four significant other encouragement variables. A consistent finding throughout all four of the tables was that practically no one indicated that he/she had been given "discouraging" or "strongly discouraging" advice. Advice was to achieve, not "not achieve."

The remaining significant other variables--close friends' college plans--did not exhibit a significant difference between the sexes. The between-sexes distributions were almost identical (see Table 16). A little more than half of both the males and the females indicated that their close friends were going to college.

Thus, it appears that sex was not an overly significant variable in accounting for differences in the significant other variables. At least when using chi-square tests, the sex hypothesis was not supported.

The next set of variables contains the three final dependent variables in the proposed model. The first of these was marital plans and, as would be expected from the findings presented in the previous chapter, there was a highly significant difference between males and females. Looking at Table 17, it becomes apparent that most females desired to marry at age 22 or younger. Roughly 85% of the females had

Table 16. Close Friends' College Plans by Sex of the Respondent: Percentages and Frequencies (in parentheses)

Close Friends' College Plans	Males	Females	Total
Not going to college	45.2(94)	43.6(92)	44.4(186)
Going to college	54.8(114)	56.4(119)	55.6(233)
Total	100.0	100.0	100.0
N =	(208)	(211)	(419)

χ^2=1.073; 1 d.f.; p$\leq$.740

Table 17. Marital Plans (Desired Age at Marriage) by Sex of the Respondent: Percentages and Frequencies (in parentheses)

Desired Age at Marriage	Males	Females	Total
18 or less	2.1(4)	15.1(31)	8.9(29)
19	3.7(7)	13.2(27)	8.6(34)
20	15.3(29)	22.9(47)	19.3(76)
21	21.2(40)	22.4(46)	21.8(86)
22	10.6(20)	11.2(23)	10.9(43)
23	10.1(19)	3.9(8)	6.9(27)
24	6.3(12)	3.4(7)	4.8(19)
25	16.4(31)	6.3(13)	11.2(44)
26 or older	14.3(27)	1.5(3)	7.6(30)
TOTAL	100	99.9	100
N =	(189)	(205)	(394)

$\chi^2 = 69.310$; 8 d.f.; $p \leq .0001$

marital plans of 22 or younger, while only 50% of the males had such desires. Over 30% of the males desired to marry at 25 or older as compared to around 8% of the females. The reverse of this pattern appeared at the younger ages. Almost 30% of the females desired to marry at age 19 or younger while only about 6% of the males shared such desires. Therefore it appears that males and females have divergent views on marital plans.

Furthermore, males and females exhibited a statistically significant difference in their fertility plans. It will be recalled that males desired, on an average, fewer children than did females and this finding was obvious in the data presented in Table 18. For example, proportionately more males than females desired no children at all. Two children was the number most often given by both males and females, followed closely by the three and four children categories.

The final dependent variable and the major concern in this study was educational plans. Although there was not a statistically significant difference between the sexes for this variable, certain slight discrepancies were apparent. In Table 19, it can be observed that proportionately more males than females planned on terminating their education upon graduating from high school. On the other hand, females, more so than males, planned on vocational-technical school, graduating from junior college and graduating from college. Lastly, males, more so than females, planned on post-graduate study. Although certain slight variations did exist, sex did not appear to be overly important in affecting the educational plans of rural white youth.

Thus in consideration of the sex hypothesis, the chi-square tests

Table 18. Fertility Plans (Desired Number of Children) by Sex of the Respondent: Percentages and Frequencies (in parentheses)

Desired Number of Children	Males	Females	Total
0	14.4(30)	3.8(8)	9.1(38)
1	2.4(5)	4.3(9)	3.3(14)
2	37.5(78)	36.5(77)	37.0(155)
3	19.2(40)	16.6(35)	17.9(75)
4	17.3(36)	26.1(55)	21.7(91)
5	5.8(12)	3.8(8)	4.8(20)
6	2.4(5)	6.2(13)	4.3(18)
7 or more	1.0(2)	2.8(6)	1.9(8)
TOTAL	100.0	100.1	100.0
N =	(208)	(211)	(419)

$\chi^2 = 24.522$; 7 d.f.; $p \leq .001$

Table 19. Educational Plans by Sex of the Respondent: Percentages and Frequencies (in parentheses)

Educational Plans	Males	Females	Total
Quit School Right Now	0.5(1)	0.5(1)	0.5(2)
Complete High School	17.8(37)	12.9(27)	15.3(64)
Vocational-Technical School	22.1(46)	29.0(61)	25.6(107)
Graduate From Junior College	3.8(8)	6.7(14)	5.3(22)
Graduate From College	31.2(65)	34.3(72)	32.8(137)
Post-Graduate Studies	24.5(51)	16.7(35)	20.6(86)
TOTAL	99.9	100.1	
N =	(208)	(210)	(418)

$\chi^2 = 8.627$; 5 d.f.; $p \leq .124$

did not overwhelmingly support such a relationship. However sex comparisons of certain dependent variables, in particular parental encouragement, marital and fertility plans, did seem to point out differences. The next section will further elaborate on the effect of sex as an influence on the formation of educational plans.

The Effect of Sex on the Formation of Educational Plans

This final analysis section is devoted to the direct and indirect effect that sex of the respondent has on the formation of educational plans. By testing the same model for the total sample, the effect of sex can be assessed.

The zero-order correlations are presented in Table 20; however, they will be left uninterpreted because of the attention they received in the within sex analyses.

Turning to the path coefficients presented in Table 21, and directing specific attention to the influence that sex had on the significant other variables, it is noted that sex produced a statistically significant effect only on perceived parental encouragement. This finding, excluding the one exception, runs counter to any sex-role socialization notions; however, such an interpretation is premature because other potentially significant variables had not been controlled. Overall, the findings add only slight support to that part of the hypothesis concerning the influence that sex has on the significant other variables.

Another part of the sex hypothesis concerned the total and mediated influence that sex has on educational plans. As would be

20. Zero-Order Correlations, Means and Standard Deviations of Variables in a Recursive Model of the Formation of Educational Plans: Total (N=301)

bles[a]	A	B	C	D	E	F	G	H	I	J	K
	--										
	.516***	--									
	.378***	.325***	--								
	.271***	.216***	.173**	--							
	.068	.081	.056	.305***	--						
	.110	.072	.028	.420***	.503***	--					
	.134*	.163**	.191***	.290***	.383***	.358***	--				
	.309***	.302***	.173**	.237***	.246***	.305***	.341***	--			
	.026	.042	-.024	-.037	-.022	.099	.040	.086	--		
	.000	-.007	-.025	-.014	-.077	-.050	-.025	-.046	-.136*	--	
	.278***	.240***	.213***	.396***	.315***	.358***	.394*	.371*	.093	-.024	--
	4.611	5.130	37.641	3.894	3.983	3.953	3.598	.585	21.721	3.063	4.213
d- ation	1.913	1.592	22.059	.903	.794	.867	.767	.494	3.162	1.627	1.376

variables are: A = father's education, B = mother's education, C = income earner's occupation,
perceived parental encouragement, E = perceived teachers' encouragement, F = perceived guidance
selor's encouragement, G = perceived friends' encouragement, H = close friends' college plans,
marital plans, J = fertility plans, K = educational plans. *** $p \le .001$; ** $.001 < p \le .01$;
1 $< p \le .05$

21. Standardized Regression Coefficients, Coefficients of Determination and Residuals for a Recursive Model of the Effect of Sex on the Formation of Educational Plans: Total (N=301).

etermined ables[a]	D	E	F	G	H	I	J	K
					Dependent Variables[a]			
A	.203**	.032	.109	.030	.200**	.039	.012	.091
B	.086	.054	.019	.097	.186**	.031	.007	.039
C	.076	.031	-.012	.156**	.040	-.008	-.039	.061
S	-.112*	-.082	-.109	-.103	-.044	-.404***	.126*	.018
D						-.135*	.028	.193***
E						-.103	-.069	.079
F						.138*	-.013	.109
G						.001	.027	.186***
H						.068	-.036	.159**
R^2	.098	.015	.025	.059	.126	.190	.023	.320
dual	.950	.992	.987	.970	.935	.900	.988	.825

variables are: A = father's education, B = mother's education, C = income-earner's occupation, sex, D = perceived parental encouragement, E = perceived teachers' encouragement, F = perceived dance counselor's influence, G = perceived friends' encouragement, H = close friends' college ns, I = marital plans, J = fertility plans, K = educational plans. ***p ≤ .001; **.001 p .01; 1 < p ≤ .05.

expected following the chi-square test, sex did not even approach statistical significance (p = .018) relative to its influence on educational plans. The reduced form equations in Table 22 demonstrated that the significant other variables did mediate the slight total effect that sex had on the dependent variable, but the effects were all trivial. For the total sample, with sex included, the predictor variables accounted for 32% of the variance in educational plans.

Sex, as would be expected, produced a notable impact on marital plans (p = -.404) and an influence which was not reduced by the inclusion of the significant other variables. Additionally, sex demonstrated a statistically meaningful effect on fertility plans (p = .126) and one which, like marital plans, was not mediated by the significant other variables. For the total sample, 19% of the variance in marital plans was accounted for by the total equation, while only 2.4% of the variance in fertility plans was accounted for. Overall, sex had the largest influence of any of the predictor variables on both marital and fertility plans, yet the weakest effect on educational plans. The sex hypothesis, again, was only partially supported. The influence that sex had on the formation of educational plans had to be largely indirect, channeled through the significant other encouragement variables, marital plans, and fertility plans. Sex by itself did not predict educational plans; however, the indirect influence was probably significant.

e 22. Reduced Form Regression Coefficients in Standard Form for a Recursive Model of the Effect of Sex on the Formation of Educational Plans: Total (N=301).

ndent	Predetermined Variables[a]									
ables[a]	A	B	C	S	D	E	F	G	H	R^2
	.203**	.086	.076	-.112*						.098
	.032	.054	.031	-.082						.015
	.109	.019	-.012	-.109						.025
	.030	.097	.156**	-.103						.059
	.200**	.186**	.040	-.044						.126
	.038	.029	-.020	-.399***						.161
	.039	.031	-.008	.404***	-.135*	-.103	.138*	.001	.068	.190
	.008	.001	-.036	.129*						.017
	.012	.006	-.039	.126*	.028	-.069	-.013	.027	-.036	.024
	.182**	.110	.112	-.048						.102
	.091	.039	.061	.018	.193***	.079	.109	.186***	.159**	.320

variables are: A = father's education, B = mother's education, C = income-earner's occupation, perceived parental encouragement, E = perceived teachers' encouragement, F = perceived guidance selor's encouragement, G = perceived friends' encouragement, H = close friends' college plans, marital plans, J = fertility plans, K = educational plans. *** $p \leq .001$; ** $.001 < p \leq .01$; 1 $< p \leq .05$

CHAPTER VIII

SUMMARY AND IMPLICATIONS

Summary

The purpose of this study was to develop an inclusive theoretical framework relative to the formation of educational plans; to utilize the framework to develop a theoretical model; to test the model as to its applicability to each sex; and finally, to ascertain the effect that sex has on the formation of educational plans.

Using a modern systems framework, an informational flow was theorized which linked antecedent social structural conditions to socialization, the development of a self concept and ultimately to the selection of an educational plan. A provision for interaction with other "open" systems provided a necessary link for understanding the complexities involved in this process. Two external links were examined: one was marital plans and a second was fertility plans.

Relevant theoretical and empirical literature were reviewed. The examination of several extant theoretical models of the formation of educational plans showed the direction that this research domain has followed. The first model, developed by Sewell and Shah (1968a), linked socioeconomic status and measured intelligence to college plans directly, and indirectly via perceived parental encouragement. This model was significant to the present study because of the role that perceived parental encouragement (a socialization measure) had on mediating the effects of socioeconomic status and measured intelligence on college plans.

The second model reviewed, known as the "Wisconsin Model" (Sewell et al., 1969; Sewell et al., 1970), provided refinement and elaboration on the Sewell and Shah model (1968a) and added further support for the crucial intervening role of significant others on a youth's level of educational aspiration.

A third theoretical model was formulated by Bayer (1969a). The importance of this model, despite certain specification problems, was the intimate empirical relationship between marital plans and educational aspirations. This relationship suggested the importance of career contingencies on the formation of educational plans.

The next model, developed by Woelfel and Haller (1971), was an attempt to approach the same process in a somewhat different fashion. Basically, feedback loops were established between significant others' educational expectations, educational aspirations and academic performance. This complex array of influences provided an excellent example of system feedback, although the model had certain methodological limitations. More importantly though, the influence that role modeling has on the formation of educational plans was stressed in the model.

A final theoretical model was developed by Picou and Carter (1976). The Picou and Carter model of educational aspirations utilized three measures of social origin and four measures of significant other influence. One of the significant other measures was a peer modeling variable, which added support to this socialization mechanism.

Drawing from all of the previous theoretical models, as well as from the more abstract systems framework, an alternative model was then presented. The three stage model linked three social origin measures (father's education, mother's education and income-earner's occupation) directly and indirectly to four significant other encouragement measures (perceived parental, teachers' guidance counselor's and peers' encouragement to attend college), a peer modeling measure (close friends' college plans) and finally to marital, fertility and educational plans.

Previous empirical literature on the relationship of sex to the formation of educational plans was then reviewed. Five general hypotheses were derived from the theoretical and empirical review and were tested utilizing Louisiana data from the Southern Youth Study.

The findings of the study can be summarized quite succinctly. Hypothesis 1 stated that social origin will affect significant other influence. For males, contrary to previous research and the first hypothesis, social origin did not exhibit a notable effect on the significant other encouragement measures. However, social origin did seem to predict whether or not a youth's close friends were planning on attending college. In other words, the peer modeling variable appeared more dependent on the social origin measures than did the significant other encouragement variables. Moreover, similar to the previous research, the direction of influence was consistently positive between the social origin and significant other influence variables.

Hypothesis 2 posited that social origin and significant other influence, in combination, will affect educational plans. All of the significant other influence variables, with the exception of perceived teachers' encouragement, positively influenced educational plans. Of these variables, statistically significant influences were produced by perceived parental encouragement and perceived friends' encouragement. Furthermore, in agreement with the findings of Sewell and Shah (1968a), Sewell et al. (1969), Sewell et al. (1970) and Carter (1972), the significant other variables were found to mediate the total effect of the social origin variables on educational plans. Thus, the second hypothesis was supported.

Hypothesis 3 stated that social origin and significant other influence, in combination, will affect both marital and fertility plans. Inconsistent findings in both direction and degree characterized the influence of the predictor variables on the formation of these two dependent variables. Of the sixteen hypothesized paths to marital and fertility plans, none were statistically significant and no influence pattern was detected. Therefore, the third hypothesis was rejected.

Hypothesis 4 posited that marital plans and fertility plans will be related to educational plans. This hypothesis was partially supported as marital plans showed a significant inverse association with educational plans. Fertility plans, on the other hand, displayed only a trivial inverse relationship with educational plans.

Overall, the findings largely supported the applicability of the model for males. Approximately 35% of the variance in educational plans was accounted for by the social origin and significant other influence variables. Moreover, positive relationships were found between the social origin variables, the significant other influence variables and educational plans.

Generally, the same summary could be given for the applicability of the theoretical model for females. As was the case for males, the first hypothesis was only partially supported because the social origin measures, in general, did not overly affect the significant other influence variables. However, there was a consistently positive relationship found between the variables.

Similar to the males, the significant other variables also exhibited a noteworthy positive influence on the educational plans of females. Of all the significant other measures, the strongest influence was exerted by the modeling variable--close friends' college plans. The remaining significant other variables, with the exception of perceived guidance counselors' encouragement, all produced statistically significant influences on educational plans. While for males, parental encouragement was the best predictor, for females, teachers' encouragement was the best predictor. Once again, the significant other variables mediated the direct effect of the social origin variables on educational plans. Thus, the second hypothesis was again largely supported.

Hypothesis 3 was also rejected for the females as neither marital nor fertility plans were significantly accounted for by the social origin and significant other influence variables. The coefficient of determination for both marital and fertility plans was small, the path coefficients were mostly small and the direction of influence was inconsistent.

Partial support was given to the fourth hypothesis. As was the case for the males, for females, the relationship between fertility plans and educational plans was trivial. However, marital plans demonstrated a highly significant positive relationship with educational plans. This positive relationship contrasted with the negative association between these variables for the male sample. One interpretation of this finding could be that females who were intent upon obtaining higher education were willing to defer or "exchange" marriage until completion of their desired education.

The model, in general, was found to be applicable to females. The direction of influence was positive and 31% of the variation in educational plans was accounted for by the social origin and significant other influence variables.

The second analysis chapter was devoted to the fifth hypothesis which stated that sex will affect significant other influence, marital, fertility and educational plans. In sum, it can be stated that if sex has any influence on educational plans, it is mediated through other variables. Chi-square tests of all the dependent variables in the model produced statistically significant differences between the sexes only for marital plans and fertility plans. Sex, explicitly included as an exogenous categorical variable in the regression equations, did not even approach significance as to its direct effect upon educational plans. Nevertheless, sex did significantly affect perceived parental encouragement as well as marital and fertility plans thus suggesting the possibility of indirect influences on educational plans. On the basis of these findings the last hypothesis was only partially supported.

Certain differences between the sexes were obvious (see Table 23). In terms of mean scores, males perceived slightly more encouragement from parents, teachers, guidance counselors and friends than did females. Also, males were more likely to have close friends who were planning on attending college. Males desired to marry later in life and have fewer children than did females. Finally, males exhibited a slightly higher mean score for educational plans than did females.

For males, parents and friends were the most important sources of significant other influence relative to educational plans. However, for females, these sources were overshadowed by the influence of close friends' college plans and perceived teachers' encouragement. Guidance counselors ranked low for both sexes and lastly, for males perceived teachers' encouragement to attend college was the least important source of significant other influence.

As shown in Table 23, proportionately more males than females indicated that they had been "encouraged" or "strongly encouraged" by parents, teachers, guidance counselors and friends to attend college. However, proportionately more females than males indicated that their close friends were planning to attend college.

There was a larger percentage of males with "high" (i.e., older age) marital plans than females. This was contrasted by a larger percentage of females with "low" marital plans (see Table 23). Similar patterns were observed for the sexes relative to fertility plans. Finally, proportionately more males than females planned on college or post-graduate studies, while proportionately more females

Table 23. Summary Table of Comparisons Between The Sexes

	Mean Score	
	Males	Females
Perceived Parental Encouragement	3.986	3.810
Perceived Teachers' Encouragement	4.049	3.924
Perceived Guidance Counselor's Encouragement	4.049	3.867
Perceived Friends' Encouragement	3.671	3.532
Close Friends' College Plans	.601	.570
Marital Plans	23.042	20.525
Fertility Plans	2.850	3.260
Educational Plans	4.259	4.171

Ranked Importance of Significant Others Relative to Their Influence on Educational Plans

Males	Females
1. Parents	1. Friends (college plans)
2. Friends	2. Teachers
3. Friends (college plans)	3. Parents 4. Friends
4. Guidance Counselor	5. Guidance Counselors
5. Teachers	

(Table 23 - to be continued)

(Table 23 - continued)

Comparison of Percentages Between Sexes

	Males	Females
% "encouraged" or "strongly encouraged"		
Parents	70.2	57.3
Teachers	67.8	65.0
Counselors	63.9	59.8
Friends	56.2	47.9
% with close friends planning to attend college	54.8	56.4
% with marital plans which are:		
High (> 24)	37.0	11.2
Medium (21-23)	41.9	37.5
Low (≤ 20)	21.1	51.2
% with fertility plans which are:		
High (> 5)	9.2	12.8
Medium (3 & 4)	36.5	42.7
Low (≤ 2)	54.3	44.6
% with educational plan of:		
Complete High School or Less	18.3	13.4
Vocational-Technical	22.1	29.0
Junior College	3.8	6.7
College or Post-Graduate	55.7	51.0

Comparison of Coefficients of Determination for Total Model

	Males	Females
R^2(%)	34.8	31.2

(Table 23 - to be continued)

(Table 23 - continued)

Comparison of Zero-Order, First-Order Partial and Multiple Correlations of Marital and Fertility Plans with Educational Plans

	Males	Females
r_{KI}	-.154	.367
$r_{KI.J}$	-.164	.369
r_{KJ}	-.012	-.026
$r_{KJ.I}$	-.059	-.046
$r_{K.IJ}$	.164	.359

The variables are: K = educational plans, I = marital plans, J = fertility plans.

planned on junior college or vocational-technical training.

Implications

This study has basic theoretical as well as pragmatic implications concerning the formation of educational plans. Several theoretical implications can be drawn from this study relative to the systems framework presented earlier. First, for both sexes, social origin had a positive influence on educational plans. Consistent with the specification of the framework, this influence was largely indirect and channeled through the significant other influence variables. These two findings support the overall framework and are congruent with previous research. However, it should be noted that the degree of influence was smaller than that found in most previous research. Secondly, marital plans appear to be an important consideration in understanding the formation of educational plans for both sexes. This supports the relevance of external information links as specified in the theoretical framework and suggests the possibility of "trade-offs" among future plans. Finally, sex, as specified in the framework, appears to account for certain slight variations in the process of forming educational plans. In general, the theoretical model seems applicable to males as well as to females, but certain slight differences were found. Consistent with the finding by Alexander and Eckland (1974), sex did not have a direct influence on educational plans; however, sex did significantly affect perceived parental encouragement, marital plans and fertility plans, thus raising the possibility of indirect influences. Overall, the systems framework was supported. The antecedent structural factors influenced the socialization factors which in turn influenced the final output--educational plans.

Policies and programs which are concerned with raising educational plans should perhaps direct more emphasis on the sex-specific socialization aspects. For example, while teachers were found to exert a strong influence on females' educational plans, their influence on males' educational plans was of lesser importance. Consistent with virtually all previous research, parents and peers exhibited significant influences on the educational plans of both sexes (especially for males) and therefore any program or policy concerned with maximizing significant other influence should be cognizant of these two sources.

Implications of this study for future research are rather straightforward. The role of career contingencies should be further examined to determine the extent and nature of this influence source on educational plans. Other socialization influences need to be examined, too. For example, the effect of each parent separately, the effect of media, relatives and extracurricular activities should also be examined. Additionally, other role models should be considered besides peers. But most of all, this type research should be continuously updated. Sex roles in American society are forever changing and, no doubt, with increased economic pressures and increased educational opportunity, this process of change may be expected to continue.

Of course, these findings should be treated with a certain degree of caution. The study is generalizable only to rural whites in

Louisiana, but could probably be extended to other rural areas in the South with some degree of confidence. Certain other limitations could also restrict the study. First the sample size is small and there is missing or uninterpretable data in some cases. Certain methodological limitations should also be noted. Measurement error, gross deviations from a linear additive model, multicollinearity and variable specification are all considerations which may have hampered the analysis. Of course, precaution was exercised, where possible, to minimize these problems.

These limitations are not presented to discount the findings. Rather, they represent cautions which should be considered to maximize the utility of the study, and to gain a better understanding of the process by which males and females formulate educational plans.

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APPENDIX A

QUESTIONNAIRE ITEMS USED

This appendix contains the questions that were used to measure the variables considered in this study.

Sex

2. Sex (Circle one number): 1 male 2 female

Race

6. What is your race? (Circle one number)

1 White 2 Black 3 Oriental 4 Indian 5 Other

Marital Status

7. Which of the following statements best describes you? (Circle one number):

1 I am married

2 I am engaged

3 I go steady

4 I date often but do not go steady

5 I date very seldom or never

Marital Plans

8(b). At what age would you like to get married?

Fertility Plans

8(c). How many children do you want?

Educational Plans

13. If you could have as much schooling as you desired, which of the following would you do? (Circle only one answer):

1 Quit school right now.

2 Complete high school.

3 Complete a business, commercial, electronics, or some other technical program after finishing high school.

4 Graduate from a junior college (2 years).

5 Graduate from a college or university.

6 Complete additional studies after graduating from a college or university.

Parental Education

22. What is the highest school grade completed by your father and mother? (Circle one number for father and one number for mother):

Father		Mother
1	Did not go to school	1
2	Grade 1-7	2
3	Eighth Grade	3
4	Some high school but didn't graduate	4
5	Graduated from high school	5
6	Went to vocational school after graduating from high school	6
7	Some college but didn't graduate	7
8	College graduate (4 years)	8
9	Don't know	9

Income-earner's Occupation

26. What is the main job held by the major money earner of your home? (Write your answer in the following box. Give a specific job, not the company or place worked for. For example: press operator, foreman, teacher, etc)

Perceived Parental Encouragement

Page 15 #1.

In general, have your PARENTS (Circle one number):

1. STRONGLY DISCOURAGED you from going to college.
2. DISCOURAGED you from going to college.
3. NEITHER DISCOURAGED NOR ENCOURAGED you about going to college.
4. ENCOURAGED you to go to college.
5. STRONGLY ENCOURAGED you to go to college.

Perceived Teachers' Encouragement

Page 15 #2.

In general, have your TEACHERS (Circle one number):

1. STRONGLY DISCOURAGED you from going to college.
2. DISCOURAGED you from going to college.
3. NEITHER DISCOURAGED NOR ENCOURAGED you about going to college.
4. ENCOURAGED you to go to college.
5. STRONGLY ENCOURAGED you to go to college.

Perceived Guidance Counselor's Encouragement

Page 15 #3.

In general, has your GUIDANCE COUNSELOR (Circle one number):

1. STRONGLY DISCOURAGED you from going to college.
2. DISCOURAGED you from going to college.
3. NEITHER DISCOURAGED NOR ENCOURAGED you about going to college.
4. ENCOURAGED you to go to college.
5. STRONGLY ENCOURAGED you to go to college.

Perceived Friends' Encouragement

Page 15 #4.

In general, have your FRIENDS (Circle one number):

1. STRONGLY DISCOURAGED you from going to college.
2. DISCOURAGED you from going to college.
3. NEITHER DISCOURAGED NOR ENCOURAGED you about going to college.
4. ENCOURAGED you to go to college.
5. STRONGLY ENCOURAGED you to go to college.

Close Friends' College Plans

Page 15 #5.

Are most of your CLOSE FRIENDS (Circle one number):

1. Going to college.
2. Getting jobs, probably not going to college.
3. Going into military service.

VITA

The author was born May 3, 1952, in Houston, Texas and attended public schools in the Houston Independent School District, graduating from Westbury Senior High School in May, 1970. Upon graduation from high school, he entered Texas A&M University. He received a Bachelor of Science degree, having majored in Sociology, in May, 1974. In the Summer of 1974, he enrolled at Louisiana State University and has been pursuing graduate work in Sociology, minoring in Psychology. The author is married to the former Chanda Lynn Benbow Farnsworth. At present, he is a candidate for the Master of Arts degree.